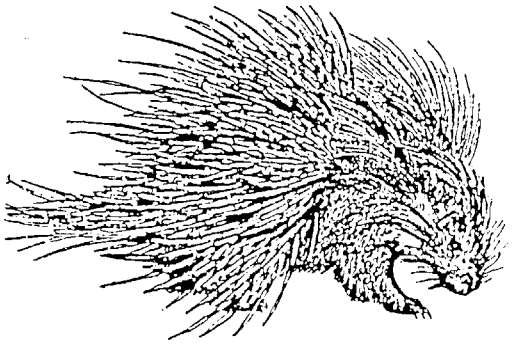
MARCH 1996 NUMBER 14

Porcupine!

ISSN 1025-6946

Newsletter of the Department of Ecology and Biodiversity, Hong Kong University



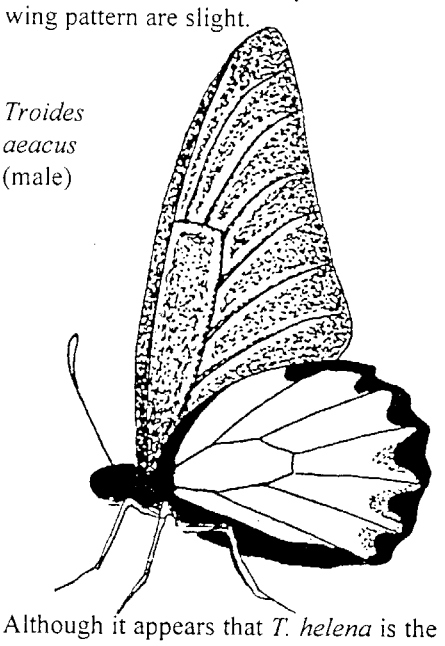
THE EVER-BURGEONING size and scope of this newsletter have prompted us to make two innovations: we've numbered the pages and got ourselves an ISSN. You can't get much more professional than that and still not charge any money....

Butterflies make a triumphant bid for dominance of this issue, engineered primarily by George Walthew (nice one, George). Also vying for attention is a five-page report on Dingushan Man and Biosphere Reserve in Central Guangdong - hopefully the first of several such reports on Chinese nature reserves (we want an excuse to keep on going to them). Richard Corlett repeats his invasive weed act, cropping up in all sorts of places (but not the Bar - from which Yvonne Sadovy sends us a sobering account of cyanide fishing (p. 22)), and Prof. Ron Hill defiantly asserts his literary unshakeability on p. 11. Regular contributors Michael Lau, Keith Wilson and Skip Lazell are all here (pp.7, 13 and 30), while other major articles come from Pauline Tong, Mak Yiu Ming and Jane Frohlich (pp. 8-10).

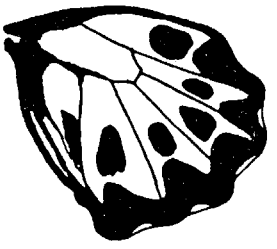
At 38 pages, *Porcupine!* No. 14 is the fattest ever issue of this newsletter. We're gonna need a bigger stapler....

Hong Kong's other Birdwing

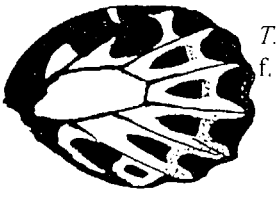
An increasing number of records of Birdwing Butterflies (*Troides helena*) have been reported in recent issues of **Porcupine!**. However, readers may not be aware that *two* species of *Troides* occur in Hong Kong. As well as *Troides helena* [the only insect species protected by law in Hong Kong] there is also *T. aeacus*, a species which is widespread in southern China. The two species are difficult to separate in the field as the differences in wing pattern are slight.



Troides aeacus (male)



T. helena f. hind wing



T. aeacus f. hind wing

Although it appears that *T. helena* is the commoner of the two, the extent to which this is so is very unclear. The genus *Troides*, although uncommon, is certainly not as rare in Hong Kong as hitherto thought and has a very wide distribution in the New Territories. The site on Lantau Island however, mentioned by Michael Lau in **Porcupine!** No. 13, is the only one on Lantau where I have seen Birdwings, and I have seen none on Hong Kong Island.

The two species have been seen flying in the same localities and may share the same food plant in Hong Kong, *Aristolochia tagala*, which is also the foodplant of the Common Rose (*Pachliopta aristolochiae*). It is usual to find this last species flying at the same locations as the Birdwings and usually in greater numbers.

Troides helena is at the northern limit of its range in Hong Kong while *T. aeacus* occurs as far north as Zhejiang and Taiwan. Anyone seeing Birdwings should try to identify them to species (although this is only likely to be possible if they settle) so that a clearer picture of their relative abundances can be obtained.

GEORGE WALTHEW

[see also Recent Additions to the Butterflies of Hong Kong *(p.26) and* Some Butterfly Species New to Hong Kong *(p.29) inside, plus back page]*

SWIMS news

Dr. Alice Chan has completed one year of a two year Croucher Foundation post-doctoral research fellowship at the University of Wales, Bangor, and is returning to the Swire Institute of Marine Science for her second year to initiate local research on tubeworms (Serpulidae).

Huang Qin has just obtained her PhD from the University of Hong Kong for a thesis entitled "Polymorphism in twelve species of Neritidae (Mollusca: Gastropoda: Prosobranchia) from Hong Kong" and has been awarded a University postdoctoral research fellowship to continue her researches on polymorphism at the Swire Institute of Marine Science.

Dr. Li Mingshun of the Guangdong Environmental Monitoring Centre has been awarded a University of Hong Kong postdoctoral fellowship for one year, tenable at the Swire Institute of Marine Science, to undertake joint research with Dr. S.Y. Lee on the Mai Po mangrove.

Mr. Graham Blackmore has been awarded a University of Hong Kong postgraduate studentship to undertake research in the Cape d'Aguilar Marine Reserve (at the SWIMS) on trace metals in marine food chains under the supervision of Prof. Brian Morton.

Brian Morton

HORSESHOE CRABS WANTED

Claire-Louise Nightingale would be grateful if any person encountering dead specimens of Horseshoe crabs on Hong Kong beaches could collect them so that she may obtain them for identification and measurement purposes.

Ms. Nightingale can be contacted at the Swire Institute of Marine Science on tel. 2809 2179 or fax 2809 2197.

Baseline Survey of Hong Kong's Corals and Coral Fishes

The Swire Institute of Marine Science of the University of Hong Kong has been awarded a HK$1.83 million grant from the Hong Kong Jockey Club Charities Trust to undertake a baseline survey of Hong Kong's corals and coral fishes. The grant will allow the Institute to hire supporting technical staff and produce a book on Hong Kong's inshore fishes, particularly those associated with reef areas. Field work for the survey will be conducted by two postgraduate students: Ms. Denise McCorry and Mr. Andrew Cornish.

The survey will complement other research on corals and underwater life already completed or being undertaken currently by staff and students at the Institute. Its focus will be on producing underwater maps and baseline biodiversity surveys. The survey findings will help the development of management proposals for Hong Kong's first proposed marine park at Hoi Ha Wan and first proposed marine reserve at Cape d'Aguilar. The Institute is now working closely with staff of the World Wide Fund for Nature Hong Kong at Hoi Ha and with staff of the Country and Marine Parks Authority at both locations.

The coral and reef fish survey will at first attempt to define the extent and significance of local species, and will subsequently be refined to focus on any areas of inshore water where reefal communities are identified as being diverse, in order to characterize them for future protection. Hong Kong's corals, numbering 51 known species, are here at the northern end of their tropical Indo-Pacific range and survive tenuously over the cold winter. They have, however, suffered so much damage through pollution, commercial development and illegal fishing activities in recent years that in some areas they are known to be dying. This will have an impact on the fishes that depend on them for shelter.

The Charities Trust grant will allow the Institute to map surviving corals, estimate their diversity site by site, and characterize the associated fish fauna. The first results of the research, which will focus on marine reservation and management issues, are expected to be presented at the Third International Conference on the Marine Biology of the South China sea to be convened at the University of Hong Kong in October 1996. Over 140 delegates from 14 countries in the South China Sea rim and others have expressed an interest in participating in the Conference. It is hoped that, with the current interest in marine pollution problems in Hong Kong and the region, this Trust-sponsored research will make the case for marine conservation to become a practical reality in Hong Kong and stimulate a wider interest in the conservation of the South China Sea.

Brian Morton
Director, Swire Institute of Marine Science

A visit to Chebaling Nature Reserve

On 24-25 December 1995 I went for a trip to Chebaling Nature Reserve in northern Guangdong Province, on the border with Jiangxi Province. In these two days, more than 60 species of birds were recorded, about 40 of which were forest inhabitants. The bird community structure there was very different from that in Tai Po Kau Nature Reserve. The common bird observed in Chebaling was the Grey-cheeked Fulvetta (*Alcippe morrisonia*), not the Chinese Bulbul, Great Tit or White-eye - the commonest species in Hong Kong forests. Only 20 Chinese Bulbuls, 40 White-eyes and 1 Great Tit were seen. Other species that are rare in Hong Kong, such as Black Bulbul, White-bellied Yuhina, Striated Yuhina and Grey Treepie, were present in good numbers. These differences might be explained partly by the greater age and stratification of the forests or, more probably, by the extinction of these species in Hong Kong as a result of near total deforestation in the past. Rufous-capped Babbler and Rufous-necked Scimitar Babbler were seen in shrubland. Birds like Blyth's Kingfisher, Crested Kingfisher , Brown Dipper and Slaty-backed Forktail, that are difficult to see in Hong Kong, were observed foraging around a river penetrating the forest I visited. In addition, three pairs of Mandarin Duck (three males and three females) were seen, which was the first record of this species in Chebaling Nature Reserve.

The majority of birds seen came in flocks and the Grey-cheeked Fulvetta was usually the nuclear species. I also saw many birds eating fruits. This might be due to the presence of many fruiting trees but the low temperature (-2 to 12 C) might also make the birds exploit this food resource, as well as forming flocks.

Kwok Hon Kai
Dept. Ecol. & Biod., HKU

REORGANISATION AT KARC

Prof. D.K.O. Chan, the Director of Kadoorie Agricultural Research Centre, will shortly be re-organising laboratory space at the Centre to accommodate new biotechnology projects. At the same time he is anxious to ensure that the needs of ecologists using the Centre are met. Any student or lecturer of DEB planning to make long-term use of facilities at KARC in the future should inform Prof. Chan of their requirements, in order that any necessary room conversions can be made.

STATUS RATERS

Accompanying an E.I.A. Bill currently being discussed to improve environmental impact assessment in the Territory, a Technical Memorandum is being assembled on ecological impacts. A number of DEB ecologists are helping compile status listings of groups of flora and fauna. These will be used to assist the Agriculture & Fisheries Dept. to evaluate impacts of proposed developments. If any ecologists or naturalists would like to contribute expertise, please contact Ms. Alex Yau at WWF-HK, tel. 2526 1011.

WWFHK Hong Kong Environmental Profile

The World Wide Fund for Nature Hong Kong has recently commenced a two-year project entitled *Hong Kong Environmental Profile*. The project has been sponsored by the Environment and Conservation Fund and Woo Wheelock Green Fund.

The project aims to compile a Territory profile by pooling together existing (but scattered) data concerning all aspects of Hong Kong's environment. The results will act as a baseline for policy makers for conservation purposes and as an education resource for schools, educational institutions and the general public. Through this exercise, WWF HK hopes to compile an all-Hong Kong literature bibliography related to Hong Kong's environment and conservation issues. The literature survey as well as the data collecting exercise will allow us to identify areas where information is lacking, thus enabling targeting and prioritising of potential future studies.

Topics covered in the Profile include Hong Kong's physical environment, biodiversity and heritage, land-use, industry, transport and communication impact, resource production and consumption, environmental pollution, population, housing, health and the environment, institutions and organisations, and a summary chapter focusing on cross-border environmental influences as well as possible future environmental scenarios.

For the section on biodiversity and heritage, we will be compiling: (1) a Hong Kong fauna and flora inventory; (2) site database on sites of ecological importance (this will include both sites that are and are not currently classified under any statutory ordinance. In both of these areas, WWF HK is seeking assistance from readers of *Porcupine!* to provide us with a check list of species and or sites that you may consider worth conserving), and (3) a bibliography of biodiversity studies done in Hong Kong.

Please contact Ms. Sam Broom or Ms. Rita Leung at 2526 1011 (tel.) or 2845 2734 (fax), or e-mail wwf-hong_kong@wwfnotice.infonet.com for further information.

Sam Broom, WWF HK

NATURE FIGHTS BACK (but shoots itself in the foot)

When writing the "Aliens" chapter of *Hills and Streams* ("the ideal Christmas present" Anon. 1995), David Dudgeon and I could come up with few examples of introduced species which had caused obvious, significant destruction of semi-natural ecosystems in Hong Kong. Most of the numerous naturalized aliens are confined to sites which are chronically disturbed by people and thus unsuitable for most native species anyway. The only clear example we found of a damaging introduction was the pinewood nematode, *Bursaphelenchus xylophilus*, apparently from North America, which has virtually eliminated Hong Kong's native pine species, *Pinus massoniana*. There is also circumstantial evidence for a reduction of native fish, and possibly amphibia, by introduced poeciliid fishes.

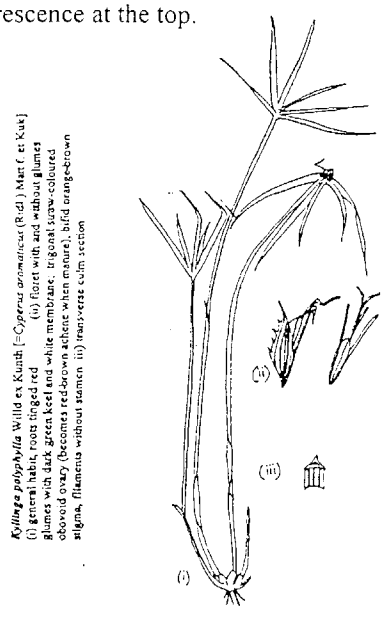
Recent observations on pre-dispersal seed predation (the destruction of seeds *before* dispersal) by squirrels and cockatoos suggest an additional threat. The cockatoo population does not appear to be expanding at present but even the current number cause considerable destruction of seed crops on the northern side of Hong Kong Island. I have previously reported the messy and almost complete destruction of the seed crop of *Scolopia saeva* (*Porcupine!* No. 10) and have recently seen them doing the same to *Tetradium glabrifolium* (= *Evodia meliaefolia*). As with *Scolopia*, the cockatoo bites off an entire fruiting head, eats a few unripe fruits, and drops the rest: a few percent of the seed crop is directly destroyed and the rest ends up on the ground, where it is unlikely to ripen or be dispersed if it did.

Squirrels *are* spreading and, while a few years ago we could believe that they were confined to regularly disturbed sites, this is clearly no longer the case, at least on Hong Kong Island. The squirrels eat many species of fruit, usually unripe, but are particularly fond of *Sapium discolor*. Trees of this species within squirrel territory seem to lose almost all the crop before it ripens. *Sapium* is not only a common pioneer tree but it is probably also an important facilitator of forest succession, as its fruits attract frugivorous birds at a time when their guts are full of seeds from other species. Seed predation by squirrels could interfere with this process, both by reducing the attractiveness of existing trees to birds and by reducing the next generation of trees. Squirrels also threaten *Schima superba*, *Gordonia axillaris*, and probably other species. It is too late to do anything about the squirrels, which, anyway, may simply be re-occupying a niche left vacant by the earlier extinction of the native species, but it is clear that Hong Kong needs to monitor and, if necessary, control the cockatoos and any future introductions of seed predators.

RICHARD CORLETT

New sedge for Hong Kong

Julia Shaw has identified an increasingly common weedy sedge as *Kyllinga polyphylla* Willd. ex Kunth, a new record for Hong Kong and, possibly, China. This species is called *Cyperus aromaticus* in much of the regional literature. Unlike most Cyperaceae, it is very easily identified. The erect flowering stems are 10-70 cm tall, with the leaves clustered at the base and 5 - 8 long leaf-like bracts around the ovoid inflorescence at the top.



Kyllinga polyphylla Willd ex Kunth [=*Cyperus aromaticus* (Ridl.) Mattf. et Kuk.]
(i) general habit, roots tinged red (ii) floret with and without glumes
glumes with dark green keel and white membrane, trigonal straw-coloured
obovoid ovary (becomes red-brown achene when mature), bifid orange-brown
stigma, filaments without stamen iii) transverse culm section

This species originated in tropical Africa and has spread gradually to Fiji (by 1933), Singapore (1941), Australia (late 1970s), Sri Lanka (1977) and, no doubt, elsewhere. In Fiji and Australia it is called "Navua Sedge", after the district in Fiji where it first became a major weed. It has probably been in Hong Kong for several years, at least, because it is now widespread on Hong Kong Island and at scattered localities in the New Territories. It is particularly common in infrequently mown lawns but also occurs along roads and paths, and in ditches. This species is considered a bad weed in Fiji and Australia, where it invades pastures. In Singapore it is abundant in park grasslands, where it tangles kite strings! It is most aggressive in regions without a dry season so it may be less of a problem in Hong Kong.

RICHARD CORLETT

Sex scandal shocks marine biologist

On the 16th of January 1996 one of the many interesting limpet species found in Hong Kong was observed spawning at Cape d'Aguilar. The limpet, *Cellana toreuma*, was seen spawning at 10.00 am when the tide was quite low (1.12m above Chart Datum). The animal was found high on the shore, well above the splash of the waves, and appeared to be quite dry. A white exudate was visible on the rock surface, and this was collected for microscopic examination.

On examination, the exudate appeared to be sperm - having a distinct body, what appeared to be an acrosome and a long tail. Individuals were not observed moving. Previously, *Cellana toreuma* limpets expired at low water, and well dried out individuals have been seen to exude white (sperm?) or green (eggs?) liquids in the mid to late winter months. A Japanese worker (Koibe, 1985) published a short description of the sperm of this species, but it was not very detailed. Firstly, this sighting is of interest as there are very few field observations of limpets spawning, and secondly this limpet was stranded about a metre away from the water's edge - why would a limpet release its gametes when it was exposed on the shore? Surely this is wasteful as the gametes would not survive on the shore for very long? Would predator disturbance account for this seemingly futile act? Perhaps if the limpet was being attacked then this was its last attempt to pass on its genes? Answers on a postcard .....

SEONAID ANDERSON

In July 1995 I noticed several tall (approx. 50-90cm) yellow-flowered orchids in a swampy area of flower-rich bog on Sai Kung peninsula. The orchids were rooted in several inches of water. After discussions with Bernard Coultous (a local orchid enthusiast) a site visit was made and a specimen collected (Bernard has AFD permission) which was taken to Gloria Baretto at Kadoorie Farm and Botanic Garden for further examination. Mrs Baretto is of the opinion that the orchid may be a species of *Liparis* new to the Chinese region. There is a possibility that the species may be new to science. A sample of a fresh flower raceme is required from next year's flowering for confirmation. *KEITH WILSON*

Spiny horror threatens Territory! (and it is NOT a porcupine)

While at Wu Kai Sha on the 1995 first year field course, I found a single plant of a species of *Mimosa* which has not, as far as I know, been previously recorded from Hong Kong. Although there were no flowers and fruits, the vegetative characteristics were unmistakeably those of *Mimosa diplotrecha* Sauvalle, which is incorrectly called *M. invisa* in all the weed literature. The specific epithet "*invisa*" comes from the Latin, *invideo*, meaning "to hate", which gives some idea of the character of the plant. The 4-angled stems are covered in recurved prickles which, together with the scrambling habit, gives the impression - both visual and tactile - of a sort of organic barbed wire. In comparison with the familiar common sensitive plant, *Mimosa pudica*, this giant sensitive plant is bigger, spinier, brighter green, equally sensitive and has bipinnate rather than subdigitate leaves. Both species are of Brazilian origin and have become naturalized throughout the tropics, but *M. diplotricha* has a more patchy distribution. It occurs in tropical China so its presence in Hong Kong is not at all surprising.

Mimosa diplotricha is classified as "an extraordinarily noxious plant" in Queensland and is a very bad weed of pastures, sugarcane and other crops throughout the humid tropics. A single plant can rapidly cover 2-3 square metres of ground and reach 1-1.5 metres in height. We removed all of the specimen we found but it is very probably established elsewhere in the Territory. Unless the winters here are too cold, Hong Kong has a new and unwanted addition to its flora.

RICHARD CORLETT

Although fruit bats are often considered exclusive frugivores there are, in fact, many references to them eating leaves - largely young leaves - as well. In a recent paper (Bhat, H.R., 1994. *Mammalia* 58:363-370), our commonest fruit bat, *Cynopterus sphinx*, is described as regularly feeding on the leaves of several tree species, mostly legumes. I think we must be overlooking the same behaviour here. Fruit bats in Hong Kong breed in early summer when the fruit supply is at a minimum but young leaves are widely available. Fruit bats do not swallow fibrous materials but chew them up, squeeze out the juice in the mouth - between the tongue and the palate - and drop the resulting pellets of chewed material. I would be very grateful for any relevant observations! *RICHARD CORLETT*

Feedback.....

Dear *Feedback*,

Court of Appeal rejects Nam Sang Wai

Most people are probably confused by now over the number of proposed developments around the Deep Bay wetlands. Some of these, like that proposed at Nam Sang Wai, have gone from a lower court to a progressively higher one for a decision.

The process is usually for the Town Planning Board to hear the initial application, but if it is rejected then the developer can seek an appeal with the same Board. If the application is still rejected, then the developer has the option of taking the case further to the Town Planning Appeal Board which has a different set of members. It was this Appeal Board which gave approval for the golf course and housing development at Nam sang Wai in August 1994. However, Government objected to the decision and took the case to a higher level of the judicial system in order to overturn the decision. From the Appeal Board, the case went for a Judicial Review which, however, supported the Appeal Board's approval.

In December 1995 Government took its arguments to the highest court in Hong Kong, the Court of Appeal. When the decision came out in January 1996 it was to quash the Town Planning Appeal Board's decision to approve the Nam Sang Wai development. The main reason for the Court's rejection of the development was that it considered that the planning intention for Nam Sang Wai was primarily to conserve the wetland existing at the site so that it can act as an effective buffer for the Mai Po and Inner Deep Bay Ramsar Site. The Court considered the proposal put forward by the developer was too excessive to fit in with the Government's guidelines for developments in the area, and the Court also considered that the planning conditions put forward were unworkable. However, the Court of Appeal's decision is far from the "Green Victory" that many media reports have made it out to be. The developer has now filed an application for the case to be heard by the Privy Council in Britain, and it is hoped that this can be done within the year.

This year will be an important one for the Deep Bay wetlands because firstly, the report from the Planning Department-sponsored fish pond study will hopefully be released by the middle of the year and should put an end to the debate over the ecological value of fish ponds (see *Porcupine!* No. 13, August 1995). Then this spring the Agriculture and Fisheries Department will be selecting a consultancy team to draw up a comprehensive management plan for the Mai Po and Inner Deep Bay Ramsar Site, and this should be completed before the end of the year. The consultancy team will have to consider a range of complex issues, such as how best to deal with the large areas of private land lying in the Ramsar Site, and how the future management of the Ramsar Site will be funded. Consultation with the different interest groups at the site, such as developers, NGO's, local people and relevant Government departments, will be essential in ensuring that a workable plan can be produced.

LEW YOUNG
Manager, Mai Po Marshes Nature Reserve

Dear *Feedback*,

I visited Nan Kun Shan reserve in Guangdong in August last year and found a number of animals in cages outside restaurants, including Bamboo rats and various pheasants and partridges. However, one species I was unable to identify looked like a beaver, was about 50cm long including long hairless/short-haired tail, with relatively wiry long fur, and long incisors. It was referred to by the villagers as a 'san lei', meaning 'mountain animal'. I got the impression that this was a specific rather than a generic name. However, to date I have been unable to identify the species. Can any reader of *Porcupine!* tell me which species it is?

TIM WOODWARD

This may have been a Coypu (Myocastor coypu) *- a large South American rodent. There may be feral populations in China, as in the USA, Canada, Northern Europe, Asia Minor, Central Asia and Japan. Possibly farmed in China for its fur and meat. Coypus have been spotted in other markets in southern Guangdong - ed.*

Dear *Feedback*,

On 24 October last year I went to Sha Lo Tung and spotted 4 war-games activists firing machine guns at each other, which was as disturbing for me as I guess it was for the wildlife. War-games seem to be an increasingly popular diversion in Hong Kong.

I also spotted a butterfly catcher with a huge net on Sha Lo Tung road. I have often seen people catching butterflies there - is it legal? And is war-gaming legal in/outside country park areas?

ROBERT DAVISON

Dr. P.M. So replies for the Director of Agriculture and Fisheries:

We share Mr. Davison's feelings of the possible disturbance of the "war game" on wildlife. As far as existing legislation is concerned, "war game" is not an illegal activity outside of country parks, in particular on leased land. However, if the intention is to hunt any wild animal, then it would contravene the Wild Animals Protection Ordinance, Cap. 170.

The above Ordinance also provides that it is illegal to possess any protected wild animal taken in Hong Kong or any hunting appliance without a Special Permit. So the catching of butterflies using any hunting appliance is indeed illegal. Should your readers encounter any suspected illegal activity, they may report to our park wardens or the police for immediate action.

Another New Hong Kong Snake

A dead snake picked up by David Willott in 1986 near the summit of Tai Mo Shan was recently identified as *Rhabdophis nuchalis* (Groove-necked Keelback), another new record for Hong Kong. It was a juvenile with a white inverted V-shaped marking on the neck which makes it quite similar in appearance to *Amphiesma atemporalis* (Mountain Keelback), another rare snake from Tai Mo Shan. *R. nuchalis* differs from *A. atemporalis* by having uniformly dark brown ventrals, a black dot below the eyes, 15 scale rows around the body, 14 scale rows in the neck region, a groove in the middle of the neck, more ventrals and fewer subcaudals. Adults are brown in colour without the white collar.

The appearance of this species in Hong Kong is quite unexpected because it was only known from western China and neighbouring Burma and Vietnam. However, this probably reflects the inadequacy of field research in southern China, as several other Hong Kong reptiles also show similarly discontinuous distributions.

MICHAEL LAU & ANTHONY BOGADEK

Status of *Amphiesma boulengeri* and *A. sauteri* in Hong Kong

Amphiesma boulengeri was first reported from Hong Kong based on a dead adult specimen found at Kadoorie Farm and Botanic Garden in May 1995 (*Porcupine!* No. 13). The first record of *A. sauteri* in Hong Kong was from a juvenile found in the Shek Kong area in 1985 (Lazell, 1988); and subsequently another juvenile was picked up dead in the same area in 1991 (J. Lazell, pers. comm.). Recently the two Hong Kong specimens of '*A. sauteri*' were borrowed from the Harvard Museum of Comparative Zoology and were re-examined. The two specimens (MCZ 176503 and MCZ 171462) actually belong to *A. boulengeri*. Their scale counts were compared with those of *A. boulengeri* and *A. sauteri* using Hu *et al.* (1980) and Gressitt (1937), and are listed below:

	A. boulengeri	*A. sauteri*	176503	171462
Dorsals (mid-body)	19	17	19	19
Ventrals	143-169	120-147	152	151
Subcaudals	71-107	66-92	95	99

The coloration of the two preserved juveniles is quite similar to the Kadoorie Farm specimen and the original description in Gressitt (1937) except that the two dorsal lateral stripes are whitish in colour (as opposed to pale orange, which may be due to discoloration after death and preservation) and the upper labials are predominantly white in colour (this may be due to juvenile coloration).

MICHAEL LAU

References

Gressitt, J.L. (1937). A new snake from Southeastern China. *Proc. Biol. Soc. Washington*, **50**:125-128.

Hu, B., M. Huang, Z. Xie, E. Zhao, Y. Jiang, Q. Huang, Y. Zong and J. Ma (1980). *Atlas of Chinese Snakes*. Shanghai Press Sci. Technol., Shanghai (in Chinese).

Lazell, J.D. (1988). Herpetology in South China. *Herpetol. Rev.*, **19**(3):49-51.

Acknowledgements

I would like to thank Dr. John Cadle for allowing me to borrow the two specimens. Assistance from Dr. James Lazell and Professor Kraig Adler is also much appreciated.

Herbivores in the mangal

Pauline Tong

"Add a few µml of solution A into a few µml of solution B, centrifuge for two hours and then repeat the whole process again and again.... Count the number of coloured spots on the agar gel. Don't miss any because THAT's YOUR RESULTS!!!" This was what I had done during my final year undergraduate course. I studied biotechnology when I was an undergraduate in the Hong Kong Baptist College (University). DNA sequencing, gene cloning, electrophoresis, is that all for BIOLOGY??? I was really fed up with these things. Until one day, I told myself: "I really enjoy research work but I hate being tied up in the lab for the whole day. So, what is your choice? Yeah! ECOLOGY!! That's what I am looking for. What's next? A supervisor! Who? Where?". The first thing I did was check my account. Oh!! Only two hundred dollars!! You can't go abroad. Why not look for a local one? I gave a call straight to Dr. Richard Corlett (he probably forgot he had met me before). How about Dr. Gray Williams? A smart looking guy (before he gained his weight!!), but.... When I was about to give up, the chance came along. Working on mangroves, why not? I had decided to take up this project when I first met my supervisor, Dr. S.Y. Lee, probably because I was attracted by his charming scientist look (a secret!!) or was it fate?

It is always not easy to get things started. Instead of going straight to design my experiment, the first question I had to answer was "What is ecology?" and even worse, "What is statistics?"; both of them were completely new to me. Then, the next big question was "What is herbivory?".

For the past two years, I've spent most of my time comparing the herbivory levels of *Kandelia candel*, one of the dominant mangrove species in Hong Kong, at my study sites - Mai Po and Ting Kok. I had to search for the herbivores feeding on my plants. Once they were caught, some of them had to be reared to adulthood before they could be identified. I had to figure out the reasons why there were differences in the herbivory intensities between the two sites. Instead of looking everywhere for the answer, I concentrated much of my work on analyzing the differences in chemical contents of the leaves collected from the two sites. After all, I had to find out what sorts of impacts these feeders had imposed on the mangal as a whole. This involved looking at their effects on nutrient cycling, fecundity, plant defences and growth rates of the mangroves. But why are they important? Well, insect herbivores have long been documented for their role as regulators in plant succession, primary production as well as nutrient cycling in forest ecosystems, yet little has been done on their effects on mangroves. Therefore, like Carmen's and Winnie's (now Dr. Anderson's and Dr. Kwok's), my project is just a tiny bit of the whole picture of mangrove ecosystems which is, however, crucial for their conservation and monitoring.

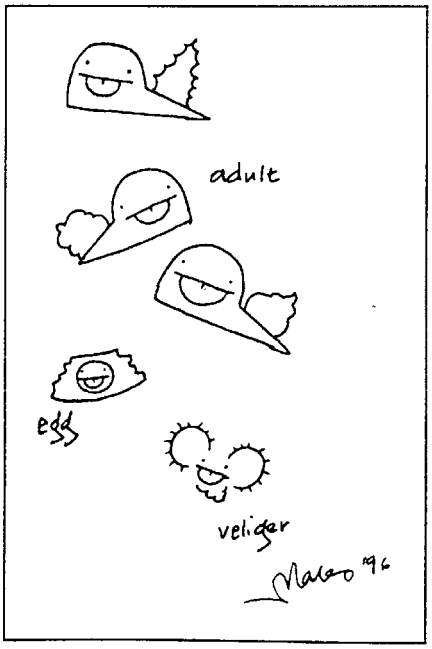
That's what I learned in the past two years. What more?? I also gained invaluable experience in how to make nice cement blocks; how to repress weeping after I had a head-on collision with a honeycomb (thanks Steve!); and how to be patient and continue my sampling when raindrops hit my face like pebbles and the tide came up to my waist!! And one more: I learned how to concentrate and carry on my work when Sandy Lam or Wai Wai were in concert in the Marine Lab for the whole day. *Oh! My love! My darling! I hunger.....* Life has never been easy for an ecologist, yet whenever I compare my work with those people doing boring paper work in Central, I always have a hearty smile on my face!!!

Winkle, Winkle Little Snails, How I Wonder What You Are

Mak Yiu Ming

I don't know why I chose to work on these tiny little inedible snails, perhaps I was chosen to work on them. I remember the first time I came across or noticed their existence was about three years ago, when I was desperate to work on rocky shore ecology. Then, Gray told me there should be a nice 'uncovered' story behind them, oh, sounds good, as I really like to explore new stuff. The target animals were selected, then where to go for sampling? Yes, of course, the famous Cape d'Aguilar Marine Reserve had to be one of the sites. Sites were selected based on different exposure and I needed two more, one exposed and one sheltered. Big Wave Bay, ah, was perfect for the exposed site. This site was great in summer, with the sea flat and calm, but during winter, it was too much fun. There was one time (and I hope the one and only time) when I was washed down into the sea by The Big Wave. In looking for the other sheltered sites, I selected South Bay where there was a high density of littorinids. After I'd sampled there for two or three months, I found out that the site was a gay beach, yuk! (un-pc, sorry!).

Then, on to the topics to study. Before doing so, piles and piles of literature needed to be read. It was hard but rewarding. Through reading previous work, I gained lots of basic knowledge on the subject (i.e. herbivory) and I could note which methods had been practised, how to present the data graphically and what sorts of statistical methods were relevant, etc. You might look more into it than that, but I guarantee you will get a bonus deep sleep after one or maybe half a paper! Oh, I thought I had read enough (but never did!): I started looking at their distribution and population first. These were the basic questions that ecologists should be able to answer, in case someone like Richard might ask you one day. This involved sampling (or sun-bathing) at the three sites monthly for about one year. I don't know whether you ever feel embarrassed when sampling - I did sometimes when I needed to "smell" the rocks to find my snails. After one year of sampling, I needed some change, experimental time. Other subjects which I then investigated included their reproduction, feeding biology and morphological studies. The reproductive biology involved mainly when their spawning seasons were and how this could relate back to their distribution and population dynamics to complete the planktonic gap of the life cycle. I enjoyed the whole way through, especially when I first found their beautiful egg capsules. They are amazing -each species has its own capsular



shapes, they are like transparent UFOs, each with a single egg in the middle. Then I tried to rear the eggs, so they would change into tiny helicopter-like veligers swimming up and down the beaker. However, only one was successfully grown to settle and finally, as usual, go back to heaven. I also undertook a field exclusion experiment to investigate their grazing effects on the high shore, whilst the morphological studies involved loads of measuring, weighing (I really loved to make those tiny aluminium trays!) and comparing their foot sizes on different exposure shores, so as to find out what they could wear to hold firm on the slippery rocks (any suggestions?). More than that in this field work period, I went to Roscoff in France for an international conference (new students, don't waste the opportunity!) and spent some time in Bangor in Wales, I will never FORGET that for the rest of my life!!

After three years now, I am writing up at the moment (at last!). It is hard but different especially when you find out how you could have improved your experiment and sampling method, oops!! The most difficult bit is still the incredible statistical analysis, which you can never tell if you are doing right or wrong. Besides, all those Σs, transformations, MANOVAs ....were really hard to understand, especially their underlying mathematics, and we never know all the syntax for each statistical package. In my own opinion, statistics and ecology should be included in the 'competitive exclusion principle', but that's life, whenever you hate something, you need to put up with it, agree?

Maybe I am a person really into natural science and I always find I want to work on other students' projects. However, one of the current postgraduates (yes, it's her!) has mentioned that she has got the same feeling but she never found any interest in my lovely magnificent adorable littorinids!! Despite this I still like my project the most!

Deforestation in Sarawak

Jane Frohlich

Sarawak is that part of Malaysia which lies in the northwestern corner of the island of Borneo. I visited the country at the end of 1994, prior to field work in neighbouring Brunei, and the extent of deforestation, land degradation and river siltation that I observed, and its juxtaposition with the magnificent primary rainforests which remain in forest reserves, prompted me to write this article.

The rainforests of Borneo are dominated by a single tree family, the Dipterocarpaceae. The biodiversity of these dipterocarp forests is extremely high, especially in the lowlands and hills below 300m. Unfortunately, these lowland forests are at risk from deforestation which is attributable mainly to shifting cultivation and logging (Aiken & Leigh, 1992).

Sarawak is home to a diverse mixture of ethnic groups including indigenous peoples, referred to collectively as "Dayaks" (43%), muslim Malays and Melanau (26%), Chinese (29%) and Indians (<2%) (King, 1993). Most Dayaks rely on shifting cultivation, which is also called swidden or slash-and-burn farming. Forest is cleared, the vegetation burnt, the land is cultivated and then left fallow until its fertility is restored and the forest regenerates; the cycle then begins again. Secondary forest sites are preferred and the duration of a completed cycle depends on the local ecological conditions. As only a small area is under cultivation at any time and many different plants are inter-cropped, soil erosion is minimal. The crops grown include larger trees such as banana or sago palm, and when the land is left fallow these plants provide shade which allows forest species to germinate thus facilitating the reclamation of the area by forest. Most shifting cultivators also hunt, fish and collect forest products for sale, and in a forested environment with steep slopes and poor soils this system is more efficient and sustainable than any other agricultural system which has been attempted in such conditions to date (Hurst, 1990).

There is much debate in Sarawak with respect to the proportions of deforestation attributable to swiddening or logging. Researchers disagree on the amount of primary forest cleared by shifting cultivators with yearly estimates given by three different authors of 3,600ha, 18,000ha and 60,000ha. Even the highest estimate is considerably less than the 270,000ha of primary forest logged in Sarawak in 1985 and 325,000ha in 1987 (Aiken & Leigh, 1992).

Sarawak's main exports are petroleum and oil; however, most revenue from these products goes to the Federal Malaysian Government. By contrast, all the royalties collected from logging operations go directly to Sarawak's treasury and thus logging is the largest source of revenue for the State Government (Colchester, 1993). "It is an open secret that timber concessions in Sarawak cost nothing; they may be distributed {or revoked} by the Chief Forester or Chief Minister ... who thus have tremendous influence..." (Hurst, 1990). There is not room here for me to go into the politics of the situation, but I think it is worth mentioning that during political infighting in 1987 it was revealed that "while the former Chief minister {of Sarawak} had given timber licenses to each of his eight daughters, the sisters and friends of the present Chief minister had been similarly blessed. The minister for the Environment and Tourism himself had especially massive interests in logging" (Colchester, 1993).

In theory, logging is quite carefully controlled in Sarawak, but many forestry officials have shares in logging companies, the actual work is handled by sub-contractors and the logging concessions are usually valid for short time periods. This means that no one who is actually involved in felling, transport, hauling etc. or its control "has any real interest in conservation or careful long-term management" (King, 1993).

Recently, as logging activities moved deeper into forests inhabited by Dayaks, a conflict of interests developed. The indigenous peoples saw that the benefits were going to a Malay-Melanau ruling elite and the mainly Chinese contractors who were doing the work, whereas communities whose land was affected were gaining little, if anything, from logging though they had to live with its consequences. These consequences include destruction of fruit and nut trees, depletion of fish and game stocks, flooding, and water and noise pollution.

In 1987 Dayaks from several ethnic groups erected barricades across the logging roads in the northern part of Sarawak. The State Government reacted aggressively, pulling down barricades, arresting and imprisoning numerous protestors and ensuring that logging continued. This resulted in a lot of bad international publicity and several countries campaigned to ban imports of tropical hardwoods. The Federal Government eventually responded by inviting the International Tropical Timber Organisation (ITTO) to undertake a study of forest management in Sarawak.

Continued on page 12

SIX PAPERS THAT SHOOK... Prof. R.D. Hill

Sorry, but they didn't. Nor I suspect, are there six papers of mine that shook other people, though that is for them to judge. (Lest I be accused of inordinate modesty let me blow my own trumpet to the extent of noting that I am one of very few geographers of Asia to have my career, now close to 40 years long, documented on film by the American Geographical Society.)

There can be no doubt though, that my undergraduate and masters' education at Victoria University of Wellington played a major part in the formation of my ideas about knowledge, its acquisition and its organization. In the 1950s the discipline of geography was dominated by particularism. It was conceived of as 'areal differentiation' or 'the study of what places are like' with very limited attention being paid to the study of spatial processes whether for their own sake or as the means of explaining static spatial patterns. I was very fortunate that my teachers, on the whole, pretty firmly rejected that philosophical position in favour of the views that 'processes produce patterns' and that geography should be a generalizing science, one that sought regularities rather than particularities. I was also very fortunate that my teachers placed great emphasis upon fieldwork and the development of hypotheses in the field as a result of observation and logical thinking. At the end of the very first week of our first-year course in geomorphology we were in the field and expected to make sense of the landforms in front of us and to hypothesize about the processes which had led to their formation. Another thing we were expected to establish pretty quickly was what we, and others, didn't know, the reasoning being that what was not known was at least as significant as what was known. Conceptual thinking was thus an essential for without it science was mere collection; indeed not science at all.

Looking back over the decades I see all those facets in my work - plenty of fieldwork, some of it entirely original and still not replicated - plenty of papers based on direct observation and some original 'model-building'.

Amongst some of that early work was an investigation into the manner in which the daily run of soil temperatures varied depending on vegetative cover - none, grass, forest. That was in Singapore, and as far as I know it has never been replicated. There, too, was pioneer work with Simon Nieuwolt, on urban microclimates, both indoor and outdoor. The first large-scale vegetation map of Singapore was another pioneer study, one that I felt rather upset the then Professor of Botany, A.N.Rao, who seems to have felt that a botanist should have done it. But then his Department's energies were almost wholly directed towards areas of more or less unmodified vegetation. The idea that all vegetation, whether rainforests, people's gardens and playing fields, or plants on walls and roofs was vegetation of a kind was, seemingly, altogether too revolutionary. Another pioneer paper in Singapore was derived from an introductory chapter in a fine collection of papers on *Animal life and nature in Singapore*. That derivative concerned the Republic's underwater topography which was dominated by a large, deep, and still entirely unexplained "hole" in the bottom of the sea.

By the time I left Singapore for Hong Kong in 1973 a pattern of research had been established. My major research interest, dating from undergraduate days, remained in agriculture though I was, ironically, never asked to teach it while there. Rather, in a small department, I had been required to teach 'practical geography', biogeography, soils, and, on occasion, geomorphology - all, except biogeography, fields of both undergraduate and masters' training.

With the move to Hong Kong came the opportunity to teach urbanites something about agriculture and at the same time my research interests, while continuing in that field, expanded to include land use, especially rural land use. The existence of colleagues perfectly capable of teaching geomorphology, soils and biogeography allowed some change of focus. When the KARC was opened I had ambitious plans to establish the biological productivity - as distinct from 'agricultural' productivity - of our common Hong Kong crops, something still not done. That plan was never fulfilled. We obtained some data for 'choy sum' and lettuce but when we moved on to sweet potato, it seemed impossible to get even as simple a task as watering done properly.

By that time my interest in environmental problems of subtropical uplands had been aroused. Money was obtained and a multi-pronged investigation began. First was to find out whether the tropical legume *Stylosanthes* could be oversown into our grasslands, the objective, if successful, being to provide a high-quality fodder for animals. (At the back of my mind was that, for all the talk, and some research, about lactose intolerance, Chinese people like ice-cream but manufacturers in China, especially outside the big cities, suffer from a chronic lack of the basic raw material - milk.) Well, oversown *Stylo* was quickly found not to compete with native grasses and herbs mainly because springtime growth of *Stylo* is slow compared with that of the natives. So an alternative approach, involving thick sowing of *Stylo* in hedgerows was devised, so far with mixed results.

Second was the attempt to control soil erosion using hedges of a stiff grass *Vetiveria zinzanioides*. First plantings on an unstable cut slope at KARC were very successful, the hedges holding back small boulders several kilograms in weight. Between the hedges adventitious plants quickly established themselves. Now, four years later most of the original Vetiver, though not all, has been eaten out, probably by rats. The slope, though, is still stable. That success led to further plantings, on rapidly-eroding weathered granite at Jordan Valley and Shau Kei Wan. At Jordan Valley double-row hedges combined with trees, mainly Acacias, were highly successful. But single-row hedges were hopeless there. At Shau Kei Wan, double-row hedges, with some remedial planting, are well on their way to success despite the fact that the 'soil' has scarcely any nutrient in it. Articial fertilizer application, there and elsewhere on weathered granite, has been essential. The severest test will come at a severely eroded site at Beacon Hill in 1996.

Third was to try to establish native trees on the ridge

Continued on column two overleaf

Deforestation in Sarawak cont/d

ITTO found that while forestry in Sarawak had achieved "high professional standards" and areas had been set aside for the protection of biological diversity, the hill dipterocarp forests were being overcut and inadequate catchment was resulting in gross siltation of many rivers. They also found that there were insufficient staff in the forest department to supervise and monitor logging operations, that the training of logging operators left much to be desired, that the existing set of totally protected areas, though impressive, was still "insufficient to protect the full range of habitats and biological diversity in the State", and that logging practices result in widespread environmental disruption and excessive damage to residual trees, with the result that recent levels of production could not be maintained (Aiken & Leigh, 1992).

The recommendations made by the mission included: greater staffing at the forestry department, cessation of logging on slopes greater than 60%, improvement to catchment protection and reduction in the rate of logging to a sustainable yield of 9.2 million m^3 per year (the yield was 18.2 million m^3 in 1989 (Aiken & Leigh, 1992)).

The Government of Sarawak appears to be heeding these guidelines and log exports dropped from 14.8 million m^3 in 1992 to 9.1 million m^3 in 1993, although they rose again to 9.7 million m^3 in 1994 (Johnson, 1995). However, "the essential problem is not the extraction level in terms of timber volume; crucial problems are the amounts of area logged and trees felled and the extremely wasteful and extraordinarily destructive exploitation practices. The ultimate problem is how to enforce proper harvesting and management" (Bruenig, 1993).

So, how can we help? Well, the Government of Sarawak has developed a programme to improve the effectiveness of its forestry department but it will continue to extract as much timber as possible from its remaining forests as long as timber export is its main source of revenue. Thus, the best thing we can do is to be conscientious consumers. DON'T buy tropical timber! I've yet to see a hardwood product as beautiful or as precious as the lives lost producing it.

References

Aiken, S.R. and Leigh, C.H. (1992). *Vanishing Rain Forests. The Ecological Transition in Malaysia.* Oxford University Press, New York.

Bruenig, E.F. (1993). Integrated and multi-sectorial approaches to achieve sustainability of ecosystem development: the Sarawak forestry case. *Global Ecology and Biogeography Letters* **3**(4-6):253-266.

Colchester, M. (1993). Pirates, squatters and poachers: the political ecology of dispossession of the native peoples of Sarawak. *Global Ecology and Biogeography Letters* **3**(4-6):158-179.

Hurst, P. (1990). *Rainforest Politics. Ecological destruction in South-East Asia.* Zed Boos Ltd., London.

Johnson, S. (1995). Production and Trade of Tropical Logs. *ITTO Tropical Forest Update* **5**(1):21-23.

King, V.T. (1993). Politik pembangunan: the political economy of rainforest exploitation and development in Sarawak, East Malaysia. *Global Ecology and Biogeography Letters* **3**(4-6):235-244.

SIX PAPERS THAT SHOOK... cont/d

leading from Kwun Yam Shan to Tai Mo Shan. Work on capturing occult precipitation from clouds at Tai Mo Shan had shown that nylon filaments and wire gauze both delivered significant quantities of water. So why not plant some trees with gauzes around them and some without and see what happens to soil moisture levels and tree growth? That one continues.

Finally was an investigation of soil erosion using simple apparatus - sediment traps made of discarded cans - splash pans made from lunch-boxes (to measure mobilization of materials by raindrop splash) - erosion pins made from reinforcing steel. This has involved plot studies with paired plots with no treatment, i.e. grass and ferns left to grow, plots cut every year, as farmers in Guangdong do for fuel, plots burnt and plots kept bare by using herbicides. These experiments show that the mobilization and movement of mineral soil under grass and scrub is virtually zero, that a small amount is moved on cut plots early in the rainy season before (rapid) regeneration has taken place, that burnt plots produce a 'flood' of material until regeneration - which is rather slower than on the cut plots - is substantially complete. On the 'kept-bare' plots the big surprises have been, first, that neither rills nor gullies have formed, and second, that the expected 'flood' of soil did not initially materialize. Only after about eight months of being kept bare did rapid soil loss occur, probably as a consequence of deterioration of soil structure following oxidation of soil organic matter accompanied by falls in the rate at which the soil would absorb water. This experiment also continues. It may yet indicate that controlled cutting is relatively benign and certainly suggests that even with high-intensity rainfall events (e.g. c.600mm in 48 hours) grass and ferns provide a highly effective cover.

With retirement approaching three objectives remain: to establish the long-term consequences of various treatments in the soil erosion experiment; to spread Vetiver grass to farms in southern China which very much need a cheap and effective soil conservation method; and to return to an earlier love by writing the definitive work on historical aspects of traditional farming systems in Southeast Asia, the region to which I have devoted most of my professional life.

Ron Hill, a Professor in the H.K.U. Dept. of Geography & Geology, will be retiring this summer. We wish him all the best for the future.

Hong Kong Dragonfly Update

Keith Wilson

I thought at the end of 1994 that I, and other dragonfly workers, had fully explored Hong Kong's streams and wetlands and more or less established the complete Hong Kong odonate fauna. The new discoveries of 1995 have now made me realize that many more discoveries from Hong Kong are possible and in fact quite likely. The species and subspecies total now stands *circa* 105. It would not surprise me if 125 was eventually exceeded.

New Hong Kong record of *Lestes nodalis* Selys

The first new species for 1995, *Lestes nodalis* Selys, 1891, was discovered early in the year. A mature male was taken at Pat Sin Leng near Wang Shan Keuk on 3 March 1995. This insect is similar to *Lestes umbrina* Selys, 1891, which is known from the Middle East through Indo-China to Hainan, and *Lestes concinnus* Hagen, 1862, which is known from Indo-China, Southeast Asia (including Taiwan) and extends to Australia. Between 1934 and 1960 *umbrina* and *concinnus* were treated as synonyms. Lai (1971) recorded two males and two females of a *Lestes* species taken from Pat Sin Leng and Hong Lok Yuen as *Lestes umbrina*. Hill (1982) lists *L. concinnus* for Hong Kong and provides a photograph of a brownish *Lestes* male from Hong Kong with a long pterostigma but provides no details of the specimens taken. Of the three species, *umbrina* and *concinnus* are better known. On 7 May 1995 I discovered the breeding colony of *L. nodalis* in a long-disused paddy at Pat Sin Leng. The first male discovered, in March, was a full adult with the abdomen coloured a uniform brown colour. The abdomens of the breeding males in May were pale blue. It is possible that this species aestivates throughout the dry season as an adult, in common with a few other *Lestes* species. Hitherto *Lestes nodalis* has been recorded from China (Yunnan), India, Thailand and Burma.

River Jhelum - potential SSSI

The next discovery was the River Jhelum, which is a lowland river draining the Hok Tau valley and flowing northwards across the main Fanling to Sha Tau Kok road. It clearly supports the best assemblage of lowland river odonates in Hong Kong and warrants immediate consideration for designation as a Site of Special Scientific Interest. I surveyed this river on 8 and 9 July 1995 and found the water quality to be good and apparently free of serious organic pollution. The Hok Tau valley supports a rural human population which is engaged mainly in horticultural activities with virtually no livestock rearing. Outstanding dragonflies from this site include *Labrogomphus torvus*, a rare gomphid river specialist known from only one other site in Hong Kong; *Nannophyopsis clara*, an extremely rare libellulid known only from Luk Keng and southern China; *Pseudagrion spencei*, a rare damselfly known in Hong Kong from just two other sites; *Cercion calamorum dyeri*, an uncommon dragonfly known from two other HK sites; *Rhodothemis rufa*, a tropical libellulid known previously from just one other site in HK; and lastly a thriving population of *Urothemis signata* (Rambur) which is a species not previously recorded from HK.

Ma Tso Lung

On 10 July 1995 I accompanied Paul Leader to the Ma Tso Lung area in the closed border area of the northwest New Territories. Much to my amazement thriving populations of both *Rhodothemis rufa* and *Urothemis signata* were present in weedy freshwater marsh areas and well established weedy ponds.

New subspecies of *Urothemis signata* (Rambur, 1842)

Hong Kong *Urothemis signata* from the R. Jhelum and Ma Tso Lung is a brightly coloured red libellulid with large dark red patches at the base of the hind wings. A number of subspecies of *U. signata* have been described from Indo-China. The Hong Kong form has much larger red patches than any of the other subspecies and probably represents a new subspecies.

New record of *Idionyx claudia* Ris, 1912

This species of *Idionyx* was captured below a large waterfall in a mountain forest stream at Ng Tung Chai on 2 July 1995. The first specimen, a male, was taken by Sadayuki Ugai. I caught a second male on 25 July. The caudal genitalia of the male are short, stout and simply shaped without projections. The caudal genitalia of *I. victor*, also found in HK, are long with the tips of the superior appendage strongly incurved. *I. claudia* was described from a mountainous area in north Guangdong in 1912 and there have been no records since.

***Nannophya pygmaea* Rambur, 1842**

On 7 May 1995 and 23 July 1995 I found two new excellent sites for *Nannophya pygmaea*, the world's smallest dragonfly, at Pat Sin Leng and Sai Kung. There are now three sites for this diminutive, brilliant red dragonfly in Hong Kong.

WILDLIFE WINDOWS ONE

George's Notes (Part 1)

While walking along the coastal path around the southern shore of Starling Inlet, I found a number of **Porcupine** (*Hystrix brachyura*) quills on the path between Fung Hang and Kuk Po.

Hobbys and Bats

At about 6.30 in the evening of 21 September, I was watching a large aggregation of medium-sized bats (possibly **Noctule**, *Nyctalus noctula*, or **Lesser Yellow Bats**, *Scotophilus kuhlii*) feeding on insects over the fish ponds between Mai Po village and the nature reserve. After a while I became aware of an adult **Hobby** (*Falco subbuteo*) flying amongst them. The Hobby made a number of unsuccessful passes at individual bats before finally catching one in its foot. It then made off over Mai Po village. The bats were very numerous and I estimated that there must have been more than 400 over the 40 hectares of ponds adjacent to the village.

George Walthew

Billy Hau saw a male **Barking Deer** (*Muntiacus reevesi*) on the KARC access road at 5.20 pm on 2 January.

On 3 December I walked the Kap Lung trail the easy way, from the top of Tai Mo Shan down to the Sek Kong catchment. Two wildlife encounters were memorable. The first was the sighting of a flock of 22 **Hair Crested Drongos** (*Dicrurus hottentottus*). This is an unusually high number. The birds were feeding among the flowers of some sort of gum tree.

Later on at about 10.30 am, about 1 km from the bottom of the trail, I saw a **Wild Boar** (*Sus scrofa*) on the path. The animal, a sow, was full-grown and must have weighed well over 100 lbs. She was clearly part of a foraging party and departed grudgingly into the undergrowth after making a mock charge at me.

>> John Burton

On 17 August at 1.40 pm I saw a **Five-lined Blue-tailed Skink** (*Eumeces elegans*) on the road west of Shing Mun Reservoir. Later found a newly dead **Mock Viper** (*Psammodynastes pulverulentus*) at the north-west side of the reservoir - deposited in the KFBG HK reference collection.

John Fellowes

On 19 August at 5.30 pm, *Dorothy Allan* saw a **Barking Deer** (*Muntiacus reevesi*) on the KFBG hillside.

Jane Frohlich saw a **Barking Deer** on 21 August at 6.45 am on the KARC hillside.

Kadoorie Corner August 1995 to January 1996 Part I

Sightings made on the hillside of Kadoorie Farm and Botanic Garden and Kadoorie Agricultural Research Centre, central New Territories.

30/8 A young adult **Mock Viper** (*Psammodynastes puverulentus*) approx. 30 cm long was found at 160 m near the main office.

1/9 A group of **Rhesus Macaques** (*Macaca mulatta*) were seen moving across the Farm at 400 m in the morning. Another group came through on the 14/9.

4/9 Male **Besra Sparrowhawk** (*Accipiter virgatus*) seen flying between trees at 450 m.

7/9 A female **Asian Paradise Flycatcher** (*Terpsiphone paradisi*) was spotted at 4.00 pm at 180 m.

14/9 A **Leopard Cat** (*Felis bengalensis*) was observed running across the KARC access road at 11 pm and sitting on a rock at the side of the road for several minutes. A Leopard Cat was seen several times in this area over the next few months.

28/9 An adult **Bonelli's Eagle** (*Hieraaetus fasciatus*) 'buzzed' a rehabilitated **Black-eared Kite** that was released on the KFBG hillside at 350 m.

2-4/10 Three **Hobbies** (*Falco subbuteo*) were seen over the Sek Kong catchment and above KARC.

7/10 Three **Masked Palm Civets** (*Paguma larvata*) were seen together at 8.00 pm around some rocky outcrops at approx. 350 m. Later an adult **Chinese Porcupine** (*Hystrix brachyura*) was seen in the same vicinity. A Porcupine was seen again the next day.

20/10 1 adult and 3 young **Wild Boar** (*Sus scrofa*) were seen at 11.00 am at 220m.

24/10 1 adult and 1 young **Barking Deer** (*Muntiacus reevesi*) were seen at about 6 pm at 250 m on the hillside.

3/11 An adult Bonelli's Eagle was seen mobbing a Black-eared Kite over the hillside.

24/11 An adult Wild Boar was seen on the KARC driveway at 1.30 pm.

27/11 A **Mountain Bush Warbler** (*Cettia fortipes*) was discovered stunned after hitting a window at KFBG in the morning. It was successfully released in the afternoon after a full recovery.

3/12 Two Bonelli's Eagles were seen displaying during mid- morning. One repeatedly stooped and climbed while the other circled above.

9/12 An immature **Peregrine Falcon** (*Falco peregrinus*) was seen over Tai To Yan during a serious hillfire.

A Wild Boar was startled in shrubland at 350 m at 4.00 pm.

Sightings by *G.Ades, A.Cornish, J.Frohlich, R.Griffiths, M.Lau, G.Reels*

On 20 August *Carmen Anderson* et al. saw a flock of 10-12 raptors near Sai Kung. The general concensus was that they were **Grey-faced Buzzards** (*Butastur indicus*).

A **Birdwing** butterfly (*Troides* sp.) flew over KARC on 19 August.

John Fellowes

John Fellowes heard a **Barking Deer** at Plover Cove on 10 October

Barry Nicholson discovered a dead **Free-tailed Bat** (*Tadarida plicata*) by the side of a road just north of Lung Kwu Sheung Tan, Black Point , Tuen Mun on 24 September.

Ed. A roost belonging to this species has still not been located in Hong Kong

WILDLIFE WINDOWS TWO

George's Notes (Part 2)

While on a boat trip in Tolo Harbour on 19 August, I saw a male **Birdwing** butterfly (*Troides* sp.) flying across the Tolo Harbour. It was flying south from the direction of Ting Kok, and heading towards Ma On Shan. When I saw it, it was already halfway across, and I estimated that it was at least 8 km between suitable habitats on either side of the water.

On 29 August I saw a **Shan Nawab** butterfly (*Polyura nepenthes*) flying around the trees in Tsung Pak Long village in northern NT (see Paul Aston's notes in this issue). In flight it was totally unlike the **Common Nawab** (*Polyura athamas*) being considerably larger and broad-winged. It appeared largely creamy-white with black at the apex and termen of the forewings and a row of submarginal black spots on the hindwings. The species could be mistaken for the **Mapwing** (*Cyrestis thyodamas*) but it is much larger and creamier in colour. I photographed another specimen at Shing Mun on 6 September.

On 14 September I came upon two male **Glassy Bluebottle** butterflies (*Graphium cloanthes*) "hill topping" on the summit ridge of Tai Mo Shan. In the same location there were also four male **White Commodores** (*Parasarpa dudu*).

I found a female **Danaid Eggfly** (*Hypolimnas misippus*) flying across the Water Spinach fields at Yin Kong in the northern NT, on 21 September. On 23 October I saw two males at the same site and there was one male on Ma On Shan on 29 October. Another female was at Yin Kong on 8 November.

A **Chestnut Tiger** (*Parantica sita*) was seen by the waterfall at Ng Tung Chai on 24 October and another flew across the summit ridge of Tai Mo Shan on 29 October. D.S. Hill, G. Johnston & M.J. Bascombe (1978, Annotated Checklist of HK Butterflies, Memoirs of the HK Natural History Society No. 11) says that this species is only found in the spring although I have also seen it at the Peak on Hong Kong Island in November.

- George Walthew -

Kadoorie Corner Part II

22/12 First **Blackbirds** (*Turdus merula*) seen on the Farm this winter, 9.45 am at 200 m.

22/12 A **Crested Serpent Eagle** (*Spilornis cheela*) was observed at 1.15 pm, resting in a tree on the hillside at 250m.

24/12 A **Buzzard** (*Buteo buteo*) was seen circling the Farm at 11.30 am.

7/1 An adult **Barking Deer** (*Muntiacus reevesi*) was disturbed at 6.00 pm on the hillside.

8/1 An adult **Kestrel** (*Falco tinnunculus*) was seen hovering over the terraces at 10.30 am.

15/1 A rare **Thick-billed Pigeon** (*Treron curvirostra*) was found dead after apparently hitting a fence while in full flight. In November 1986, a dead pigeon of this species was discovered just a few metres from the latest corpse! The skin of that one now reposes in the British Museum (*G. Barretto*).

30/1 **Northern Sparrowhawk** (*Accipiter nisus*) seen hunting over the Farm at 5.45 pm.

1-15/2 A **Barred Owlet** (*Glaucidium cuculoides*), **Peregrine Falcon** (*Falco peregrinus*) and **Chinese Pangolin** (*Manis pentadactyla*) seen on the Farm hillside during this period. Also a **Dog-faced Fruit Bat** (*Cynopterus sphinx*) used a wooden beam outside our administration building as a night feeding perch for 5 consecutive nights. Collections of material (seeds etc) dropped under the perch were taken, this will hopefully allow us to determine what the bat was feeding on during this period.

Gary Ades, Jane Frohlich, Rupert Griffiths, Michael Lau & Graham Reels

Urban Kestrel

GT Reels saw a **Kestrel** flying over Castle Peak Road in the centre of Yuen Long on 4 December 1995.

Ed. The rehab. centre at KFBG recently received an 'urban' **Eagle Owl** (*Bubo bubo*) supposedly a victim of a window collision in TST (!?). We welcome urban animal sightings, no matter how bizarre.

Michael Lau Reports

- One **Birdwing** seen near Ngong Ping, Lantau Island on 17 August.
- One **Barking Deer** heard during the day on a hill near Tai O, Lantau Island, on 24 August.
- A **Birdwing** was seen near Wong Chuk Wan, Sai Kung Peninsula on 9 September.
- Two **Banded Rail** (*Gallirallus striatus*) seen near Tai O, Lantau on 3 January.

John Holmes provided the following offerings: A "live" **Chinese Ferret Badger** (*Melogale moschata*) was seen on Cloudy Hill (Kau Lung Hang) on 18 November at 8 pm. A **Woodcock** (*Scolopax rusticola*) was seen on the road at the same location. Nightjars were seen at Robin's Nest, north NT on 4,5 and 20 November. **Mongooses** (Crab-eating?) were observed at Tsim Bei Tsui on 27 September, 18, 29 October.

Tern Counts

Cape d'Aguilar 12 August 1995 *Richard Lewthwaite*

Bridled Tern (*Sterna anaethetus*)	63
Aleutian Tern (*S. aleutica*)	10
Black-naped Tern (*S. sumatrana*)	6
Little Tern (*S. albifrons*)	1

WILDLIFE WINDOWS THREE

I saw two **Blue Magpies** (*Urocissa erythrorhyncha*) feeding on a fresh but dead **Spotted Dove** (*Streptopelia chinensis*) in the Chinese University Campus on 29 November.

>> Fox Wong

Sightings from KARC autumn-winter 1995

Large Spotted Cat Snake (*Boiga multimaculata*) - one juvenile, 20 cm long at 9.50 pm on 24 September.
White-spotted Slug Snake (*Pareas margaritophorus*) - two dead specimens one 29 September and the other 29 October.
Marbled Pigmy Frog (*Microhyla pulchra*) - one adult 16 November.
Hobby (*Falco subbuteo*) - one to three seen between 5 and 6 pm on 13 to 16 October.
Kestrel (*Falco tinnunculus*) - winter resident, bird returned on (or before) 14 October.
Fruit Bat (probably **Leschenault's Rousette Bat** *Rousettus leschenaulti*) - about six individuals feeding at the flowers of *Yucca* sp. at 7.30 pm on 24 September.
Wild Boar (*Sus scrofa*) - one adult with 3 young at 11 am on 20 October. Also one adult with 2 young at 1 pm on 24 November.
Giant Centipede - one 22 cm long, hunting around the residence from 18 to 21 October. Feeding on frog (5 cm in length) at 1 am on 21 October. Centipede stood on vertical surface of wall, holding the frog beneath it with its front 3-4 pairs of legs, chewing the frog's head with its mandibles.
Leopard Cat (*Felis bengalensis*) - two sightings, early October, bottom of KARC hill early in the evening.
Chinese Porcupine (*Hystrix brachyura*) - 7 October and on 18 October at 1 am.
King Cobra (*Ophiophagus hannah*) - late September, basking beside the access road to KARC in the early evening (approx. 2 m long).
Barking Deer - early November at 11 pm, at the base of the KARC hill.
Leopard Cat - 26 December about 7 pm on KARC access road. Ran into the bushes when disturbed.
Young **Wild Boar** - seen on hillside at 10 am on 27 December.
(*Observations by A. Benton, J. Fellowes, J. Frohlich, J. Law & A. Macauley*)

On 15 January, I saw a **Blackbird** feeding on a mudflat at Luk Keng. I suspect the bird was picking up invertebrates or detritus from the exposed mudflat. Strange behaviour?

Wong Lun Cheong

Richard Lewthwaite and *Pete Hopkin* saw what they believed to be a **Seven-banded Civet** (*Viverricula indica*) while driving along Cape d'Aguilar Road. It was seen running across the road close to the turn off to the lab at 6.15 am on 12 August.

Tai Mo Shan Road Kills - 21 October
Greater Green Snake *(Opheodrys major)*
?Sladen's Rat *(Rattus sikkimensis)*
Ferret Badger *(Melogale moschata)*
>> John Fellowes

I saw a **Chinese Porcupine** in broad daylight at 2 pm in Black's Link on 23 December. It was 200 m up the road beyond where the houses stop. It seemed to show little fear of humans, walking alongside the road in the undergrowth. It was an adult about 1 m from nose to tip of spines. Noises further along suggested that there was another porcupine close by.

Sally Bunker

On 18 January, at about 8 pm while driving out for dinner at Shek O, car occupants were able to follow the evening wanderings (for 50 m) of a pair of adult **Porcupines**, between the Telecom Station and Hok Tsui village. Several sightings of Porcupines have been made along this stretch, suggesting that a family group is resident.

Brian Morton

3 in early Nov. *Claire Louise Nightingale*
1 in mid-Nov. *Tracy Clarke*
1 adult on 7 & 9 Dec. *Graham Blackmore*
3 young on 18 Jan. *Khaki Chan* et al.
Most sightings occurred between 8am - 5pm

John Holmes saw a **Leopard Cat** on the entrance road to Tai Po Kau forest on 28 January at 7.15 am.

Robin Kennish reports seeing **Red Tide** at Little Palm Beach, Clearwater Bay at 2 pm on 22 January.

Ron Clibborn Dyer discovered a fresh road-killed **Javan Mongoose** (*Herpestes javanicus*) on Ting Kok road near Ting Kok village. It measured 85 cm. The animal has been passed to KFBG.

A 3 m long **Burmese Python** (*Python molurus*) was discovered in the MTL Engineers Store on Berth 2 Kwai Chung on 25 October at 2.20 pm. Our store keeper had noticed that no rats had been caught or seen in the store!! How it got to the store is another mystery.

Andy Nisbet

Killed on the Peak

While running on 31 December at 10 am Dr D.D. Waters spotted a full-grown, dead **Ferret-badger** on Severn Road. Stretched out, it measured about 50 cm from the tip of its short bushy tail to its snout. It had apparently been run over the previous night.
Dr Waters has recorded several road-killed Ferret-badgers from Severn Road and also a **Masked Palm Civet** (*Paguma larvata*) on Barker Road.

G.T. Reels & Michael Lau watched an **Eastern Grass Owl** (*Tyto longimembris*) hunting over low grassland on the tiny island of Sha Chau for 15 minutes on 1 February. The owl was first spotted at about 8 pm and was seen to pounce twice unsuccessfully.

Adult **Black-shouldered Kite** at Long Valley on 31 January at 11 am. Observed perched and hovering.

Rupert Griffiths

Compiled by Gary Ades

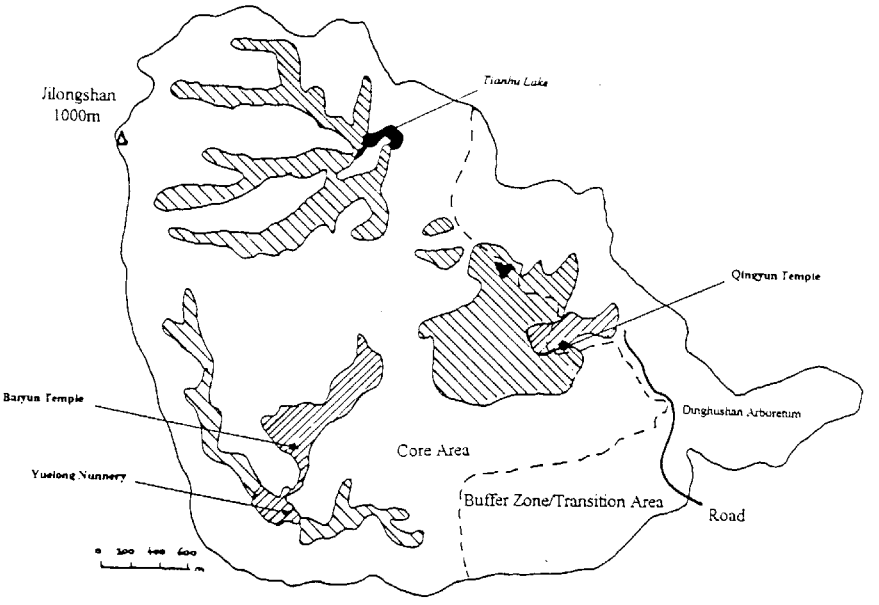
Special Feature: DINGHUSHAN MAN & BIOSPHERE RESERVE, GUANGDONG

About 86 km west of Guangzhou, and some 200km northwest of Hong Kong, lies one of China's oldest nature reserves, Dinghushan. Recognized as a UNESCO Man & Biosphere Reserve, the "Ding Hu Mountains" were in February 1995 featured in a commemorative stamp pack issued by the People's Republic of China. In September 1995 a group from DEB (HKU) and KFBG visited the reserve. Below members of the group, and other Hong Kong naturalists, give their different perspectives on the reserve's fauna and flora.

History

According to the "Dinghushan Annals", the Baiyun Temple was established by the Buddhist monk Zhi Chang in 678 A.D., during the Tang Dynasty. In the Song Dynasty (960-1279) the Yuelong Buddhist nunnery was built nearby, and a third temple was established in 1633 which became the Qingyun Temple, a flourishing centre of Buddhism throughout the Qing Dynasty (1644-1911). As a result the surrounding forests have received protection for many centuries, from monks and laypeople alike. Some trees near the Baiyun Temple are thought to be 1,300 years of age, while others around Qingyun are estimated to be 400 years old.

The forest, protected by the provincial government as a Model Forest Farm since 1930, was among the national nature reserves set up by the First Conference of the National People's Delegation in 1956. In 1979, Dinghushan joined the UNESCO Man & Biosphere Reserve network.



Sketch map of Dinghushan Biosphere Reserve

Primary evergreen broadleaf forest

Ravine rain forest

Getting There:

There is a daily high-speed ferry service between Hong Kong (the ferry terminal at China Hong Kong City) and the town of Zhaoqing (Shiu Hing in Cantonese), which is a short distance from the reserve. Alternatively, there is a daily through-train from Kowloon (Hung Hom) via Guangzhou, a five-and-a-half hour trip. From Zhaoqing, minibus-sized taxis can be hired to Dinghushan - about HK$100 for up to seven people. The Dinghu Shan Summer Resort Hotel (Tel. 0758-262-1668, Fax 0758-262-1665) provides comfortable and reasonably-priced accommodation inside the reserve. Just outside, in the small town of Dinghu there are several cheaper hotels (e.g. the Ding Hu Hotel, $170 a twin room), and a few shops and cafes within walking range. Access to the more interesting core parts of the reserve is restricted, but the necessary permits can readily be obtained from the UNESCO office (Tel. 0758-262-1116) near the reserve entrance gates: Mr Huang is the Deputy Director. In September permits cost 20 yuan for Hong Kong Chinese, 120 yuan for caucasians (UN policy?!) - WWF HK membership cards may be useful in negotiating a discount on permit fees.

Birds

For people living in Hong Kong, Dinghushan is the most accessible of the well-known forest sites in Guangdong and the easiest to cover. Although it is very much smaller than Ba Bao Shan and overall less exciting in its avifauna, it is nevertheless a rare and important example of intact lowland forest in an extensive region of deforested hills.

The core of the reserve lies around a Buddhist temple and consists of ancient trees and riverine forest which have only survived thanks to the efforts of the monks who in the face of immense pressure for timber and firewood organised a system of armed guards. However, as the power of the monks has waned, so has the size of mature forest shrunk from an estimated 1,000 ha in the first decade of this century to about 200 ha now. Nevertheless, it is still a highly diverse area of about 1,100 ha altogether which supports over 2,000 plant species. It is also a designated UNESCO Man and Biosphere site and the whole area is noted for its scenic beauty.

To date, Hong Kong birders have found just over 150 species of birds at Dinghushan and in the vicinity of Seven Stars Lake, Zhaoqing. Best months are September to May, as in Hong Kong. Birds that are regularly seen in the Dinghushan area but which are scarce or absent in Hong Kong are Silver Pheasant, Chinese Bamboo Partridge, Drongo Cuckoo, Collared Pygmy Owl, Black-browed Barbet, Speckled Piculet, Bay Woodpecker, Short-billed Minivet, Mountain Bulbul, Slaty-backed Forktail, Mountain Tailorbird, Rufous-capped Babbler, Grey-cheeked Fulvetta, Striated Yuhina and Plain Flowerpecker.

RICHARD LEWTHWAITE

Flora

Like Hong Kong, Dinghushan has a subtropical and tropical flora, with the few temperate species confined to higher-altitude areas near the 1000m summit of Jilongshan, in the northwest. Much of the reserve is covered by mixed pine and broadleafed secondary forest, dominated by *Pinus massoniana*, *Schima superba* and *Castanopsis chinensis*, with the southwestern, outer reaches dominated by more open pine woods and shrubland, and plantations of *Eucalyptus robusta*. *Cleistocalyx operculatus* and *Syzygium jambos* line the lower river.

Further in, and especially near the monasteries, things get more interesting. Bordering the stream to the north-east of Baiyun Temple, below 250m, is a strip of ravine rain forest, comprising *Canarium album*, *Ormosia fordiana* and *Caryota ochlandra*. More extensive is the ancient monsoon evergreen broadleafed forest, which occurs in riparian strips east of Yuelong Nunnery and in the largest patch, perhaps a square kilometre in extent, near the central Qingyun Temple; these areas include some of the most ancient trees. Like Hong Kong's native vegetation, and mid-altitude forests of equatorial Asia, the major tree families include Fagaceae, Lauraceae and Theaceae. At Dinghushan the dominant species are *Castanopsis chinensis*, *Schima superba*, *Cryptocarya chinensis* and *Cryptocarya concinna*.

Similar vegetation borders the streams on the upper slopes of Jilongshan, replaced, above 500m, by such species as *Lithocarpus hancei*, *Engelhardtia fenzelii*, *Machilus breviflora*, *Castanopsis fissa* and *C. fabri*. Higher still, above 800m, these give way to familiar Hong Kong-style shrubland of *Rhodomyrtus tomentosa*, *Eurya chinensis* and *Itea chinensis*, with *Baeckia frutescens*, *Rhododendron tinghuense* and *R. moulmainense* near the peak.

Twenty-three plant species in the reserve are protected, at the national or provincial level. The botanically-interested reader is referred to 'Further Reading', later in this feature, including Kong *et al.* (1993), from which this description was adapted.

JOHN FELLOWES

Mammals

The results of a search for mammal signs were fairly disappointing. The only wild mammal seen and identified was a bat, probably the Japanese Pipistrelle *Pipistrellus abramus*. At least ten of these were seen flying around the woodland edge and over the town. A slightly larger species of vespertilionid bat was also seen but not identified.

Although the survey was short we were surprised at the dearth of large mammal signs, considering this was an ancient and fairly large forest. The main path leading through the forest reserve was well maintained, and in fact was being brushed on the day we visited. This may have resulted in the removal of some mammal scats and other signs (e.g. Porcupine quills), but even forays off the path did not reveal anything exciting. In comparison a similar searching effort in Tai Po Kau (H.K.) would certainly have resulted in the discovery of Wild Boar diggings and civet scats. It would appear that trapping by locals has depleted mammal populations; Leopard Cat, Barking Deer and other wildlife were on the menu of nearby restaurants. Some mammal diggings were discovered further into the reserve, and these may have belonged to the Chinese Pangolin. Also droppings discovered near a stream belonged to a large rat, possibly a Bandicoot Rat.

Liu (1982, in Kong *et al.* 1993) listed 38 mammals from Dinghushan, including the Chinese Otter and South China Fox (both labelled "extinct"), and the Leopard and Serow (then "almost extinct"). Others listed included the South China Tiger (now surely also extinct), Raccoon Dog, Dhole, Siberian Weasel and Yellow-bellied Weasel, none of which are extant in Hong Kong. (Notable absentees on the list were squirrels, monkeys and martens.) According to Liu the richest areas for mammals were the upland secondary forests. This might still be the case, since such areas are less accessible to visitors and hunters.

GARY ADES & JOHN FELLOWES

Reference:

Liu Zhenhe, 1982. An investigation on the mammals from Dinghushan. Tropical and Subtropical Forest Ecosystem 1, 209-231.

Amphibians & Reptiles

A short trip to Dinghushan Biosphere Reserve was made by the members of DEB and Kadoorie Farm in September 1995. Seven species of amphibians, five of lizards and seven of snakes were recorded and their distribution in the reserve is listed below.

Zhao *et al.* (1981) recorded 11 species of amphibians, four species of chelonians, five species of lizards and 15 species of snakes during their work in the reserve from 1959 to 1966. Lazell & Liao (1986) added ten more species: three amphibians, three lizards and four snakes. The *Scincella reevesi* (*Leiolopisma reevesi* in the original article) in their list was later thought to be actually *S. modesta* (Lazell, 1988). One more lizard and four additional snakes were reported from the reserve by Lazell in 1988.

The findings in this trip added two more frogs: *Rana exilispinosa*, and *Microhyla heymonsi*. *R. exilispinosa* was only described in 1975 and prior to that it had been confused with *R. spinosa*. Therefore, the *R. spinosa* recorded by Zhao *et al.* may represent either one or both species. *M. heymonsi* has not been recorded in Hong Kong.

The Dinghushan *'Scincella modesta'* was recently re-examined and it should belong to the genus *Sphenomorphus* due to the absence of a transparent 'window' on the lower eyelid. It seems to differ from all the known *Sphenomorphus* spp. in China and may represent a species new to science. More specimens of this species were found on this trip.

Two species of snake recorded in this trip, the Chinese Mountain Snake *Sibynophis chinensis* and the Red-necked Keelback *Rhabdophis subminiatus*, are new additions to the list of herpetofauna of the reserve. The latter species had actually been collected from Dinghushan before but not reported in the literature (J.Lazell, pers. comm.).

The herpetofauna of Dinghushan has been relatively well-studied when compared with most areas in South China. Nevertheless a two-day trip to the reserve added three more species to the list of amphibians and reptiles known in the reserve. Moreover, there is a yet-to-be-identified skink which may be a new species to science. This reflects the gaps in our knowledge of the herpetofauna in South China.

Hong Kong is probably the most extensively studied area in South China. Unfortunately, the Territory has been and still is heavily disturbed by humans. The original forest cover was removed before any biologist could study the fauna and flora. In order to understand the patterns of distribution of animals and plants in Hong Kong today, we have to draw inferences from the few relatively undisturbed areas in South China. There is still a lot to be learnt in those lush forests. Discoveries are waiting for those who take up the challenge and carry out research in the field.

References:

Lazell, J.D. 1988. Herpetology in South China. Herp. Review 19(3), 49-51.

Lazell, J.D. & W.Liao 1986. Contribution to the herpetofauna of Dinghushan. Acta Herp. Sinica 5(1), 70-71.

Zhou,Y., Y.Qin, Y.Wang & S.Yu 1981. Terrestrial vertebrates of the Dinghushan region. Coll. Zool. Papers Guangdong Zool. Comm., Guangdong, 48-60.

I would like to thank Dr. James Lazell, Conservation Agency, for providing the literature cited in this report and for giving me access to some preserved specimens and information he collected from Dinghushan.

MICHAEL LAU

Species	Agricultural Land	Secondary Forest	Primary Forest
Bufo melanostictus		3	
Rana exilispinosa			several tadpoles
Rana guentheri		3	
Rana limnocharis	many adults	many adults	
Polypedates megacephalus		1	
Microhyla heymonsi			1
Microhyla pulchra		several adults	
Hemidactylus bowringi	several in town		
Gekko chinensis		many egg shells	2 eggs
Calotes versicolor		several	
Sphenomorphus indicus		1	2
Sphenomorphus sp.			6
Ramphotyphlops braminus		1 dead adult	
Pareas margaritophorus		1 roadkill	
Sibynophis chinensis			1
Psammodynastes pulverulentus			2
Amphiesma stolata		1 roadkill	
Rhabdophis subminiatus			1 injured adult
Bungarus multicinctus		1 shed skin	

Dragonflies

DINGHUSHAN 4

The first dragonfly observation for Dinghushan appears to be made by Ris (1912) who visited Hong Kong as a ship's doctor in 1891. He described the gomphid *Leptogomphus perforatus* Ris (1912) from Dinghushan. "1 male, Ting-Wu-Shan, leg. Mell, 800m, 22°30'N, 113°E". This species is endemic to Guangdong.

The dragonfly fauna of Dinghushan is remarkably different to that of Hong Kong. Seventy-six species have been recorded there and of these 18 (24%) do not occur in Hong Kong. Dinghushan lies on the Tropic of Cancer less than 1° of latitude north of Hong Kong. Although closer to the Palaearctic zoogeographical region the proportion of species of temperate origin does not differ much from Hong Kong. Less than 6% of Hong Kong's odonate fauna originates in the Palaearctic zoogeographical region. The proportion of species at Dinghushan with Palaearctic origins (8 out of 76) is slightly higher at 10.5%. The zoogeographical origins of the Dinghushan odonate fauna are therefore similar to Hong Kong, i.e. predominantly Oriental.

The most striking differences between the Hong Kong and Dinghushan odonate faunas are exhibited by members of the Gomphidae (Anisoptera) family. The gomphids are comprised mainly of stream specialists. Within this family different substrate types are exploited by an amazing variety of larval forms. There are torpedo-shaped sand burrowers; limpet-shaped sand/gravel nestlers; flattened, fast current-adapted, rock clingers; hairy surface mud dwellers and siphon-tubed mud burrowers. Sixteen species and 15 genera of gomphid have been recorded from Hong Kong (Wilson, 1995). This compares with 12 genera and 13 species of gomphid occurring at Dinghushan. Incredibly, considering the short distance from Hong Kong to Dinghushan (about 105 miles/ 170 km) and the similarities of aquatic stream habitats, only four species are common to both locations. The gomphid species recorded from Hong Kong and Dinghushan are given below.

Gomphidae species recorded from Hong Kong and Dinghushan, Guangdong

Subfamily	Species	HK	DHS
Hageniinae	*Sieboldius alexanderi* (Chao, 1955)		+
Gomphinae	*Asiagomphus hainanensis* (Chao, 1953)	+	
	Asiagomphus septimus (Needham, 1930)	+	
	Asiagomphus sp.		+
	Anisogomphus anderi Lieftinck, 1948		+
	Anisogomphus koxingai Chao, 1954	+	
	Burmagomphus vermicularis (Martin, 1904)	+	+
	Heliogomphus scorpio (Ris, 1912)	+	
	Heliogomphus retroflexus (Ris, 1912)		+
	Labrogomphus torvus Needham, 1931	+	+
	Merogomphus paviei Martin, 1904		+
	Leptogomphus elegans hongkongensis Asahina, 1988	+	
	Leptogomphus perforatus Ris, 1912		+
	Stylogomphus chunliuae Chao, 1954	+	
	Stylurus clathratus (Needham, 1930)		+
	Stylurus nanningensis ? Liu, 1985		+
Onychogomphinae	*Lamelligomphus hongkongensis* Wilson, 1995	+	
	Melligomphus moluami Wilson, 1995	+	
	Megalogomphus sommeri (Selys, 1854)	+	
	Ophiogomphus sinicus (Chao, 1954)	+	
	Paragomphus capricornis (Forster, 1914)	+	
Lindeniinae	*Ictinogomphus pertinax* (Selys, 1854)	+	+
	Gomphidia kelloggi Needham, 1930	+	
	Gomphidia krugeri krugeri Martin, 1904		+
	Sinictogomphus clavatus (Fabricius, 1775)	+	+
	Totals:	**16**	**13**
	Total:		**25**

Another dragonfly of interest at Dinghushan belongs to the genus *Zygonyx* (Anisoptera: Libellulidae). The larvae of these libellulids are adapted to fast-flowing water and can maintain position, clinging to vertical rock faces, in waterfalls. No species of *Zygonyx* have hitherto been recorded from continental China. *Zygonyx iris insignis* (Kirby, 1900) was described from Hainan and *Zygonyx takasago* Asahina (1966) was described from Taiwan. Two species of *Zygonyx* occur in Hong Kong: *Zygonyx iris insignis* which is very common and a much rarer species, which has not yet been described. The undescribed Hong Kong species was thought by Hamalainen (1991) to be perhaps only a form of *iris* but male material, obtained for the first time during 1995, confirms its status as a distinct species. The identity of the *Zygonyx* species at Dinghushan is of considerable interest. To my surprise the *Zygonyx* at Dinghushan, which is fairly common there, is *Z. takasago*, a species, until now, thought to be a Taiwanese endemic.

K.D.P. WILSON

References:

Asahina, S. 1966. Taiwanese Odonata taken during 1965 field works. Kontyu 34, 105-121, 44 figs.

Hamalainen, M. 1991. Idionyx victor spec. nov. (Anisoptera: Corduliidae) and some other Odonata from Hong Kong. Odonatologica 20(3), 343-347.

Kirby, W.F. 1990. On a small collection of Odonata (Dragonflies) from Hainan, collected by the late John Whitehead. Ann. Mag. nat. His. (7)5, 539-542.

Ris, F. 1912. Neue Libellen von Formosa, Sudchina, Tonkin, und den Philippen. Supple. Ent. 1, 44-85, 3 pls.

Wilson, K.D.P. 1995. The Gomphid dragonflies of Hong Kong, with descriptions of two new species (Anisoptera: Gomphidae). Odonatologica 24(3), 319-340, 58 figs.

Ants

Antwise, the news from Dinghushan is very encouraging. In less than two days of very unsystematic searching in September 1995, I found 38 species. Of these there were five I have never come across in Hong Kong. An additional six are rare in Hong Kong, being found so far in only one or two locations.

The ground ant fauna was numerically dominated by many of the same species that thrive in Hong Kong forests: the large black ponerines *Odontoponera transversa, Diacamma pallidum, Pachycondyla astuta, Leptogenys kitteli* and *L. peuqueti*, and the formicines *Camponotus nicobarensis* and *C. mitis,* for example. Despite Dinghushan's cooler winters - the January mean is 12°C - these include tropical species, like *O. transversa*, which are confined to low altitudes in Hong Kong. The less conspicuous ants brought more surprises, particularly in the restricted inner reserve. The small *Prenolepis* sp. 2 and *Vollenhovia* sp. 1, the arboreal *Crematogaster* sp. 8, *Polyrhachis* sp. 5, sp.11 and sp. 15, are all rare in Hong Kong; the latter has previously been found only at Aberdeen Wood.

New to me were the army ant *Aenictus dentatus*, the large ponerine *Odontomachus silvestrii*, and species of *Dolichoderus*, *Pheidole* and *Tapinoma*. Some, at least, of these may in the past have occurred in Hong Kong but succumbed to habitat disturbance. Most were found in the central monsoon evergreen broad-leaf forest near Qingyun Temple.

The ant literature is a frustrating hunting ground; the only reference I have found to Dinghushan is by Barry Bolton, who recently described a new myrmicine species, *Rotastruma stenoceps*, using specimens collected from the reserve in 1983 by Z. Boucek. This genus too has failed to materialise in Hong Kong. Clearly more work in Guangdong's forest reserves would be rewarding.

It would seem that ants are one group for which Dinghushan has provided a true sanctuary, particularly in the inner mature forest where fuelwood collection has been forbidden. Although I can't make quantitative comparisons without further sampling, I would guess that the Biosphere Reserve is considerably richer in its ant fauna, and possibly closer to the native Hong Kong forest, than any site remaining in the Territory.

JOHN FELLOWES

Reference:

Bolton, B. 1991. New myrmicine ant genera from the Oriental Region (Hymenoptera: Formicidae). Systematic Entomology 16, 1-13.

Further reading

Bi,C. *et al.* 1982. **Macrofungus Flora of Dinghushan area in Guangdong Province vol. I, II & III.** Guangdong Institute of Microbiology.

Brown,S., M.Lenart, J.Mo & G.Kong 1995. **Structure and organic matter dynamics of a human-impacted pine forest in a MAB Reserve of Subtropical China.** Biotropica 27(3), 276-289.

Chen,L. 1990. **The rare forest types in Dinghushan.** Zhaoqing Linye Keji 1990(1), 1-5.

De Lillis,M. & G.C.Sun 1990. **Stomatal response patterns and photosynthesis of dominant trees in a tropical monsoon forest.** Acta Oecologica 11(4), 545-555.

Ding-Hu-Shan Arboretum, South China Institute of Botany, Academia Sinica 1978. **A Handbook of Plants of Ding-Hu-Shan.**

Ding Hu Shan Forest Ecosystem Stationary, Academia Sinica (eds.) 1982-1990. **Tropical and Subtropical Forest Ecosystem Vols. 1-6.** Popular Science Press/ Hainan People's Press/ Science Press.

Kong, G., C. Liang, H. Wu & Z. Huang 1993. **Dinghushan Biosphere Reserve - Ecological Research History and Perspective.** Science Press, Beijing.

Ma,M. 1984. **A study of the evergreen broad-leafed forest of the lower subtropical zone of Guangdong.** Ecologic Science 1984(1), 16-23.

Mo,J., S.Brown, M.Lenart & G.Kong 1995. **Nutrient dynamics of a human-impacted pine forest in a MAB Reserve of Subtropical China.** Biotropica 27(3), 290-304.

Peng, S. & Z. Zhang 1995. **Biomass, productivity and energy use efficiency of climax vegetation on Dinghu Mountains, Guangdong, China.** Science in China (Series B) 38 (1).

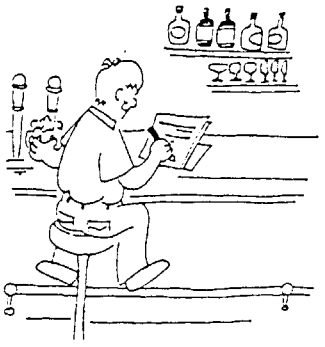
SUMMARY

The above views of Dinghushan, mostly derived from very limited field observation, give a taste of its significance in terms of biodiversity conservation. In a region transformed over many centuries by human agriculture and industry, the reserve harbours remnants of the forest biota that once covered South China. While certain groups, notably the large mammals, have suffered extinctions this century and face continued pressure, survival prospects for others are good given continued protection against encroachment, poaching and fuel-gathering, particularly in the core areas.

Despite the international recognition given the reserve, and the attention of Chinese and overseas scientists to certain taxa and ecological processes, a lot remains to be discovered about its flora and especially its fauna. The same can probably be said for all the more natural areas in the region, and further surveys are planned this year. It is to be hoped that communication between mainland and Hong Kong ecologists can be improved. The full findings of the team visiting the reserve last September will be sent to the reserve director, and are available for other interested parties in Guangdong. We invite readers with natural history observations from Dinghushan or other reserves in the Province to send them to us for inclusion in future editions of *Porcupine!*, and to be passed to reserve officials. Contributions from Guangdong ecologists and naturalists would be especially welcomed.

From the bar...

cyanide...reefs...cyanide... food.....cyanide..... fishes...cyanide...cyanide...



Yvonne Sadovy

You have all probably heard, read or seen something about cyanide, reefs and live food fishes in Southeast Asia over the last year or so and may be vaguely aware that Hong Kong, somehow, has a special place in this story. Recently we were invited to present this issue to the Legco Environmental Affairs Panel to address what is at stake and Hong Kong's role.

In October, 1995, a report, partially funded by The Nature Conservancy and the South Pacific Forum Fisheries Agency and prepared by biologist Bob Johannes and economist Mike Riepen, was released. It is entitled "Environmental, economic and social implications of the live reef fish trade in Asia and the western Pacific" and for the first time pulls together widely scattered data on the size and nature of the trade in live coral reef fishes in the region and the impacts on coral reefs of one principal fishing method used: cyanide. These data were supplemented by interviews of fishers, government officials, biologists and others throughout Asia and the western Pacific. The result is an alarming picture both of the scale of the trade in live food fishes in the region and of the consequences of cyanide use: "Coral reefs in Southeast Asia and a widening area beyond are being plundered and degraded in the quest for live reef fish to supply a lucrative market" (Johannes & Riepen, 1995).

Cyanide has been recorded since at least the 1960s to catch live fishes (for the marine aquarium trade) and has long been known to damage reefs. In the taking of live food fishes, however, the scale of its application appears to have increased multifold, with devastating effects on the richest coral communities in the world. Hundreds, possibly thousands, of tons of cyanide are dumped over large reef areas annually to catch the large fish species desired for food such as the Napoleon (humphead) wrasse and several species of garoupas. The use of this toxin promotes overfishing, wasteful bycatch and reef destruction - I can think of no other method, other than perhaps dynamiting, that is so destructive of reefs and reef resources.

According to the Johannes/ Riepen report, Hong Kong is the major importer of live food fishes: annual imports are conservatively estimated at 15,000 tonnes, representing a value of at least five times that of Hong Kong's traditional fisheries and 60% of the total live food fish trade. Hong Kong is part of the problem - it has to be part of the solution. This does not mean no more live food fish if cyanide is banned because most of the species that make up this trade can be taken by hook-and-line (rest easy wealthy piscivores!). What it does mean is the introduction of active measures to monitor local imports and support of a regional ban on cyanide use.

The Legco Environmental Affairs Panel received submissions outlining the extent and impact of this trade as well as measures already under consideration by Government. Questions were asked by Legco Panel members about ease of availability of cyanide in Hong Kong (apparently easy), law enforcement (prosecution of one cyanide-related case was successful but penalties are generally too low and cases are apparently not taken seriously by courts), health risks for humans eating cyanide-caught fish (nothing obvious but largely unknown), and education initiatives on cyanide use (leaflets). It was my perception that the Legco members appreciated the important issues and saw that Hong Kong does have a role to play towards eliminating such a destructive fishing practice. It also has much to lose by not doing so both in terms of negative international opinion and in fishery resources; very little of the fish consumed in Hong Kong comes from local waters.

Options already under consideration by the Government include introduction of a cyanide-testing programme on incoming fish, and the listing of particularly vulnerable species on a CITES appendix. We would also like to see the introduction of a monitoring programme for all incoming live fishes (currently live fishes coming into Hong Kong are exempt from trade declarations and are unmonitored) to keep track of the trade in terms of volume, species, sources, etc. With a monitoring system in place in Hong Kong, other measures such as cyanide-testing, co-operating regionally to ensure compliance with export regulations in effect elsewhere, and health checks on imported fishes would be possible.

It is hoped that the issue of cyanide use will be tabled at the next APEC meeting this Spring, and that, at some stage, a regional ban will be introduced and supported by both exporting and importing countries. It would be fitting to see progress towards eliminating cyanide fishing by 1998, proclaimed by the United Nations as the "International Year of the Ocean".

Book Reviews Book Reviews Book Reviews

HONG KONG'S WILD PLACES: An Environmental Exploration *by Edward Stokes.* Oxford University Press, Hong Kong, 1995, 198pp., HK$295, hardbound.

A casual browser in a shop might mistake this for a coffee-table book: the photographs are excellent and there is one on almost every page. They are even artistically surrounded by broad white margins. However, there is rather too much text for the coffee-table, and it is in small, if very readable, type. There are even footnotes! Soon it dawns on the browser that this is not a book for dipping into at random - at least, not the first time - but one which requires reading from the beginning. At this point, our browser moves on to something less demanding and Oxford University Press loses a sale. Their loss is our gain: this is a book for those who both know and love the Hong Kong countryside - in short, a book for the *Porcupine!* reader.

The serious reader gets a very different impression. Ed seems to have talked with everyone and read everything. No, not just *seems* to - he has! Talked, listened, read and remembered - and quoted at length in the text. This approach has its dangers: the book could so easily have been simply a compilation of facts and opinions. It is this, but it is also far more. The book is dense with information but it is also coherent and readable, and the facts you know - and the opinions you hold - are mixed with facts you did not know and opinions you were unaware of. Almost every page taught me something new or reminded me of something I had forgotten. The chapters alternate "environmental history" - from the geological past, in logical sections, up to the present day - with accounts of different regions of the Hong Kong landscape - starting with Tai Mo Shan and ending in Mai Po. This works very well - much better than dividing the book into two parts, as most people would have done.

As the historical sections approach the present day, the conservation message comes to dominate, but it is nowhere far below the surface. This is where I - and, no doubt, Ed Stokes himself - worry about who will read this book. It needs to be read, not just looked at, but is it just preaching to the converted? Will those many people in Hong Kong who believe that development must always have priority over conservation or - worse - that there is nothing left worth conserving, read it? It does not help that *Hong Kong's Wild Places*, like the other recent books on Hong Kong's natural environment, is available only in English.

The book ends with an excellent short bibliography, followed by useful notes on hiking and photography. I suspect, however, that combining Ed's tips on hiking and photography will not be enough to produce photographs like the ones in this marvellous book!

RICHARD CORLETT

MONOGRAPHIA RHOPALOCERORUM SINENSIUM *- Chou Io (chief editor).* Henan Scientific and Technological Pub-lishing House. Two volumes, 854pp., 788 Yuan, HK$2300, hardbound. Text in Chinese.

To anyone used to the poor quality of scientific books coming out of China, this work will come as a pleasant surprise. It is well bound on good paper and comes as a boxed set of two volumes. Although it is written largely in Chinese, the text of the taxonomic descriptions (which form the most important part of the book) is minimal, the bulk of the work comprising colour photographs of set specimens. There is a general introduction to butterflies, written in Chinese, which includes sections on such general topics as Biology, Distribution, etc. The book includes a Forward, Preface and Table of Contents written in English, and the chapter *A Synopsis of New Taxa* is also in English. The two volumes illustrate 1,223 species and 1,853 subspecies found in China and Taiwan. Both upper- and undersides are illustrated and in most cases both males and females of each species and subspecies. Forty-one species and 43 subspecies new to science are included.

Compared to other Chinese butterfly books it is remarkably error-free. However, errors do exist, perhaps the most serious being those of misidentification. Fortunately these appear to be few in number. The male *Pelopidas subochracea* on p. 729 is actually *Polytremis lubricans lubricans* and *Panchala paraganesa zephyretta* from Fujian illustrated on p. 636 is actually *P. birmana*, and looks very similar to the Taiwanese race *P. b. asakurae*. Moreover, *P. paraganesa* does not occur on Taiwan and neither does it occur in Hong Kong as stated in the distribution section. I am also very dubious about the *Caprona agama* on p. 707 which looks remarkably like *C. alida*. This last species occurs in Hong Kong and elsewhere in China and is only

Continued >

mentioned in passing in the text as being very similar to *C. agama*, requiring examination of the genitalia for differentiation. However, there is a notable size difference (*C. agama* being the larger) and a slight difference in the pattern of spotting. The British Museum has specimens of *C. alida* from China (including some from Hong Kong), but no *C. agama*.

Other errors, although not so serious, are equally annoying. The female *Pelopidas mathias* on p. 729 is in fact a male. The race of *Euploea sylvester* on Taiwan should be *swinhoei* and not *harrisi* (the Malayan race). *Rapala viruna* is listed on p. 653 as occurring in Hong Kong but there have been no records (*R. manea*, which does occur, is omitted). *Mycalesis intermedia* is still listed as occurring in Taiwan although it is known that the original records of this species are actually of *M. mineus*.

The spelling mistakes usually encountered in Chinese butterfly books are few and those I came across were minor: *Euplea* on p. 446 should be *Euploea*, *Hypolimnas missipus* on p. 566 (and elsewhere in the text) should be *Hypolimnas misippus*, Oxta & Kusunoka on p. 658 should be Ota & Kusunoka, and *S. qrandis* on p. 660 should be *S. grande*. Checking the Chinese text for errors was a bit beyond me.

The book does admit to being incomplete, and omits several species which are found in Hong Kong. *Rapala manea* and *Caprona alida* mentioned above are two. Others include: *Tirumala hamata*, *Ypthima posticalis*, *Creon cleobis*, *Panchala birmana*, *Famegana alsulus*, *Celaenorrhinus leucocera*, *Potanthus pseudomaesa* and *Taractrocera ceramas*.

In many cases the names given to the species will not be familiar, differing from those in the *Annotated Checklist of Hong Kong Butterflies* (Hill, D.S., Johnson, G. and Bascombe, M.J. 1978. Memoirs of the Hong Kong Natural History Society No. 11). This results partly from recent taxonomic changes and partly from the editors' preferences. To assist Hong Kong readers I will include these here:

Atrophaneura alcinous = *Byasa alcinous*
Prioneris philonome = *P. clemanthe*
Radena similis = *Ideopsis similis*
Euploea leucostrictos = *E. eunice*
Mycalesis horsfieldii = *M. panthaka*
Limenitis dudu = *Parasarpa dudu*
Hypolimnas antilope = *H. anomala*
Cynthia cardui = *Vanessa cardui*
Precis sp. = *Junonia* sp.
Curetis dentata = *C. acuta*
Narathura species = *Arhopala* species
Heliophorus epicles = *H. phoenicoparyphus*
Zizeeria maha = *Pseudozizeeria maha*
Celastrina albocaerulea = *Udara albocaerulea*
Borbo bevani = *Pseudoborbo bevani*
Parnara naso = *P. bada*.

On the whole, I found the standard of illustration to be good, although some specimens are badly photographed or badly set (the worst being amongst the Hesperiidae). Nonetheless, in spite of its shortcomings it is an excellent book and a welcome addition to any library, the more so given the lack of a decent book on the butterflies of Hong Kong.

The book appears to be widely available at branches of Joint Publishing Company but at the ridiculous price of HK$2,300. It is also available in Guangzhou at a more affordable 788 Yuan.

GEORGE WALTHEW

AN INTRODUCTION TO THE CAPE D'AGUILAR MARINE RESERVE, HONG KONG *by Brian Morton and Elizabeth Harper.* Hong Kong University Press, 100pp., softbound. HK$80 (subvented by The Shell Corporation).

Cape d'Aguilar is yet to be designated as a marine reserve but this book will leave no doubt in your mind that this tiny corner of Hong Kong island has all the qualifications necessary to deserve protection.

The book is an interesting mixture of textbook and coffee table book which teachers and students will enjoy using and casual readers will find they want to read rather than simply browse.

I have never been particularly interested in geology but found myself learning all about pock-marked rhyolite, decomposing feldspar and basaltic dykes, *and* I found it fascinating. The book covers every aspect of Cape d'Aguilar from its history through to the rich and diverse coastal and marine life found there today. It is illustrated throughout with diagrams and photographs, including some from Ed Stokes which have a special quality of their own.

Book Reviews Book Reviews

If you have never visited Cape d'Aguilar, read the book and you'll realise why so many foreign scientists have spent their research time on its shores.

JOANNA RUXTON

MOUNT NICHOLSON - Hong Kong 1978-1995. A Natural History *by Clive Viney.* 58 pp. Privately published. Available from the author at 87 Mount Nicholson Gap, Hong Kong. HK$50 (incl. p&p), softbound.

Clive Viney, author of Hong Kong's only extant bird guide, is an avid note-taker, as this modest record of his years at Mount Nicholson clearly demonstrates.

After setting the scene with a useful description of the Mount Nicholson habitat, Clive goes on to describe his arrival there in 1978 and then in the form of detailed diary entries describes the yearly avian gems observed in this area. Reptile, mammal and insect sightings are added to the entries almost as an afterthought but are nevertheless valuable additions for the record.

Particularly interesting for me was the way that Clive intersperses the commentary with important non-avian seasonal events such as the timing of the appearance of cicadas and reptiles after their winter repose. This is interesting stuff for local ecologists interested in nature's seasonal cues, and breaks up the long bird lists nicely.

I was a little worried half-way through the entries when Clive's enthusiasm for bird spotting seemed to wane, perhaps because he had seen all there was to see and didn't have high expectations that something new would come along; anyway, things did look up and he went on to discover yet more firsts and rarities for Hong Kong. It should be said that during his many years here Clive has been instrumental in cataloguing new birds and building a respectable bird-watching core in Hong Kong.

Normally the definition of a good New Year for me depends on whether or not my hangover subsides by mid-morning, but for Clive and, I guess, many other birdwatchers the quality of the "thrush winter" probably determines the rate at which wine and champagne flows! On that festive note I recommend this read not only because it demonstrates the usefulness of good field-note taking when studying any group of animals but also because it gives a valuable insight into the seasonal successions and local movements of the avian fauna at Mount Nicholson over nearly two decades. Such natural history reports for other parts of the territory would be very useful. Send them in!

Incidentally, Clive intends to donate all profits from the sale of this privately published booklet to the Hong Kong Birdwatching Society Hide Fund at Mai Po. Deadline for orders 1 May 1996.

GARY ADES

COMING SOON:

The Hong Kong Dragonflies by Keith Wilson

an Urban Council publication

Old stuff

NOTES ON THE VEGETATION OF THE WEST RIVER

"...After passing Fatshan the rice fields are replaced with mulberry trees and bamboos, the land being higher than the river and incapable of irrigation. On rising ground near the villages there are magnificent patches of arborescent vegetation, consisting of *Ficus retusa* [F. microcarpa], *F. Wightiana* [F. virens], *Fraxinus chinensis, Bombax malabathrum*, and bamboos. The soy bean - *Soja hispida* [Glycine max] - hemp, and the ground-nut - *Arachis hypogaea* - are cultivated on dry sandy soil. At forty miles from Canton the hills approach the river and form the Shui Hing Pass. A few miles to the east of this Pass are the Ting U Shan woods which contain some splendid trees probably upwards of 150 feet high; amongst them were noticed *Bischoffia javanica, Cinnamomum parthenoxylon, Sterculia lanceolata,* and *Pinus sinensis* [P. massoniana]. These woods surround a fine monastery and are protected by the priests. .... After passing the Shui Hing Pass, the hills again recede and leave a large plain on which, in addition to those plants mentioned as cultivated on the alluvial soil the other side of the Pass, Indian corn, - *Zea Mays* - is grown in summer, and wheat in winter and spring. *Euryale ferox* is also grown for the sake of its seeds which are used as food by the natives. After leaving this plain the hills approach the river and leave only a narrow strip on each side for cultivation. On the steep hills are some large patches of *Gardenia florida* cultivated for its capsules, which furnish a dye used for dying silk. Near to the Gardenia plantations are also some of *Machilus velutina* Champ, grown for the sake of its bark, which contains a glutinous substance used in the manufacture of joss sticks ... *Camellia oleifera* is grown on barren hills in the vicinity of some villages to supply the growers with oil for cooking purposes and for anointing their heads; it is not grown in sufficient quantities to sell.

A little above a town called Fung Chun, over one hundred miles from Canton, the narrow strip of land on the south bank of the river is planted with a forest of the Chan Ko Chuk bamboo which is extensively used for boat poles and scaffolding. These plantations continued, with but slight interruptions, for about the next 100 miles."

Charles Ford, Superintendent, Botanical and Afforestation Department. The Hong Kong Government Gazette, 26th August, 1882.

RECENT ADDITIONS TO THE BUTTERFLIES OF HONG KONG

In the 16 years since the publication of a checklist of Hong Kong butterflies (Hill *et al.*, 1978), a number of new species have been recorded in Hong Kong and these were listed by Young (1992) in a recent *Memoirs of the Hong Kong Natural History Society*. However, this last publication does not seem to have had a wide circulation among Hong Kong naturalists who seem unaware of the existence of these species. Several of these species have a wide distribution in Hong Kong and are frequently encountered, while at least two can be regarded as common.

Below are notes and descriptions of 12 species found since the publication of the 1978 checklist. All the illustrations, except those of *Troides aeacus* and *Graphium cloanthus*, are drawn from my own photographs.

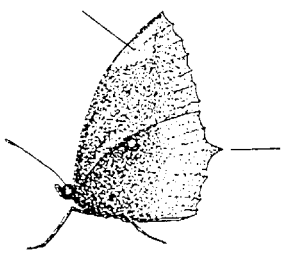
Family NYMPHALIDAE

Subfamily SATYRINAE

Elymnias hypermnestra (Linnaeus, 1763)

Common Palmfly

Distributed from India to Taiwan and south to Indonesia. In China, it occurs as far north as Hubei Province. This species has become very common in the last 16 years and can now be found all over Hong Kong Island, Lantau and the New Territories. It is suspected that the species was originally introduced on imported palms. The Hong Kong race appears to be *E.h. hainana* which occurs on Hainan and Taiwan.



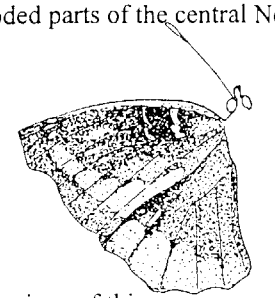
The sexes are similar being dark brown above with blue submarginal spots and a dark orange marginal band on the hind wing. The underwing is a dark red-brown with a pale triangular smudge at the forewing apex and, usually, a small white spot at the costa of the hind wing.

The larvae are reported to feed on palms and possibly on bamboo as well.

Subfamily NYMPHALINAE

Euthalia aconthea (Cramer,1777) Common Baron

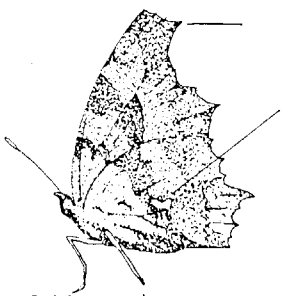
The reported distribution of this species is from India to Thailand and, in China, stretches as far north as Sichuan and Zhejiang. Two races are supposed to occur in China but specimens that I have seen in Hong Kong appear to be neither of these. It occurs in the wooded parts of the central New Territories.



The wings of this species are dark brown in both male and female with a few paler spots on the forewings and an obscure post-discal band on both wings.

Polygonia c-aureum Linnaeus, 1758 ***c-aureum*** Linnaeus, 1758 Golden Comma

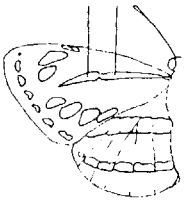
This is an eastern palaearctic species ranging through northern Asia from Mongolia through Korea to Japan but is also reported to occur in Vietnam. In China it occurs in Shaanxi, Henan and Taiwan but I have also seen it in Fujian. It is a migrant species and has occurred in Dinghushan in Guangdong. There is just a single record from Peng Chau in November 1990.



The wings of this species are very strongly angulate and in both sexes are dark orange above spotted with black. Below they are cryptically coloured dark brown with an obscure, paler post-discal band. At the cell end on the underside of the hind wing there is a white crescentic spot. This specimen was originally identified as *P. c-album* but on re-examination it was seen to be *P. c-aureum* which has the angulations of the wings sharply pointed rather than blunt.

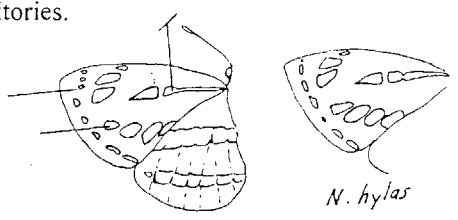
- An Update to the 1978 Checklist by George Walthew

Neptis clinia Moore, 1872 ***susruta*** Moore, ?
Clear Sailor
The recorded range of this species is from India to China. In China it occurs as far north as Sichuan and Zhejiang. It is now very widespread and common in the wooded parts of the New Territories but I have never seen it on Hong Kong Island or Lantau.



It superficially resembles *N. hylas* but is much smaller and has a narrower and elongated cell end spot which reaches the gap in the post-discal band at space 4. The underwing is brown rather than orange and the white spots on the hindwing are not outlined in black.

Neptis soma Moore, 1858 Sullied Sailor
Distributed from India to South China and Taiwan. Three races occur in China; the Hong Kong specimens most resemble *N. s. tayalina* from Taiwan. In Hong Kong it occurs in the wooded parts of the New Territories.

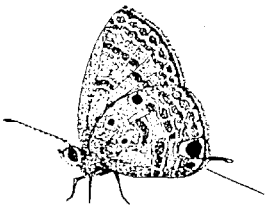


It closely resembles *N. hylas* but is usually smaller and has the white submarginal spots in spaces 6 to 8 moved inwards, out of line with the rest of the submarginal fascia. The underwing differs from *N. hylas* in the same way as *N. clinia* above.

Charaxes marmax Westwood, 1847 Yellow Rajah
The distribution of this species is from India to Burma and south China. It has recently been found at several locations in the wooded hills of the central New Territories.

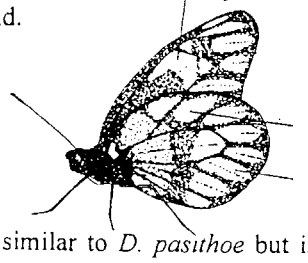
It is very similar to *C. bernardus* form *sinensis* but can readily be distinguished by the reduced area of black on the forewing apex.

Family LYCAENIDAE
Subfamily POLYOMMATINAE
Chilades pandava (Horsfield, 1829) Plains Cupid
This species has a distribution from India to South-east Asia and Taiwan. The nominate race occurs in China in Guangxi, but the Hong Kong population is most likely introduced and belongs to the Taiwnese race *C. p. peripatra*. It occurs largely in the urban areas of Hong Kong Island, Kowloon and the New Territories, sometimes in quite large colonies, where the larvae feed on imported *Cycas*. I have only seen one on Lantau.



It rather resembles *Euchrysops cnejus* but the two orange crowned black spots on the hind wing are of different sizes. The sexes differ, the female having a broad dark band along the costa and margin of the otherwise blue upperside of the forewing.

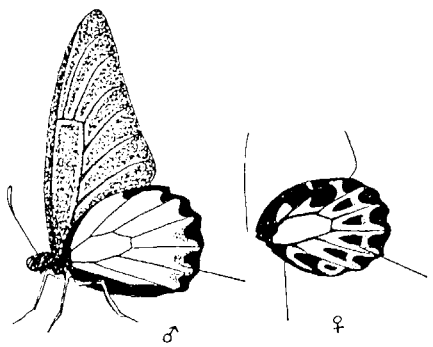
Family PIERIDAE
Subfamily Pierinae
Delias acalis (Godart, 1819) ***acalis*** (Godart, 1819)
Red-breast Jezebel
The range of this species is from India to southern China. In China it occurs in Yunnan, Hainan and Guangdong. It is quite widespread in the New Territories but I have only seen it once on Hong Kong Island.



It is similar to *D. pasithoe* but is much whiter above and below and has red at the base of the hind wing on the upperside as well as on the underside. The hind wing underside is mostly white rather than yellow. There are also differences in the underwing patterns.

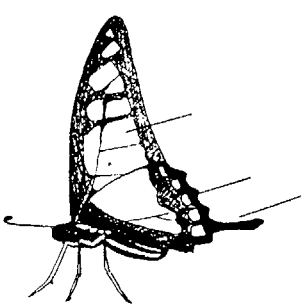
(continued from previous page)

Family PAPILIONIDAE
Subfamily PAPILIONINAE
Troides aeacus (C. & R. Felder, 1860)
Golden Birdwing
This species ranges from India through China to Taiwan so its occurrence in Hong Kong comes as no great surprise. In Hong Kong it can be found in the same localities as *T. helena*.



It appears very similar to *T. helena* and can only be distinguished by the black dusting along the inner edges of the black marginal spots nearest to the tornus of the hind wing. In some females, the black dusting may be very reduced, but can be distinguished by black at the base of space 1b on the underside of the hind wing.

Graphium cloanthus (Westwood, 1841)
Glassy Bluebottle
This species was only discovered in Hong Kong in 1994. Its range is from northern India through southern China to Taiwan. In Hong Kong it is found at high elevations in the central New Territories.

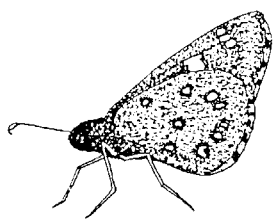


It resembles *G. sarpedon* but the blue macular band is broader and paler and the hind wing is tailed at the tornus.

Family HESPERIIDAE
Subfamily PYRGINAE
Abraximorpha davidii Mabille, ?
Found from northern Burma to Taiwan, its occurrence in Hong Kong is not unexpected. The race found in Hong is *ermasis*, which is the Taiwanese one. In Hong Kong it is quite rare, but it has been found in the central New Territories and on Lantau Island.

It rests with the wings held flat, and is brown above with numerous large white spots on both fore and hind wings.

Subfamily HESPERIINAE
Isoteinon lamprospilus C. & R. Felder, 1862
A largely Chinese species, it ranges from north Vietnam to Japan. In Hong Kong it has been found in woods in the northern New Territories and southern Lantau.



The undersides of the wings are orange brown with many black-ringed white spots.

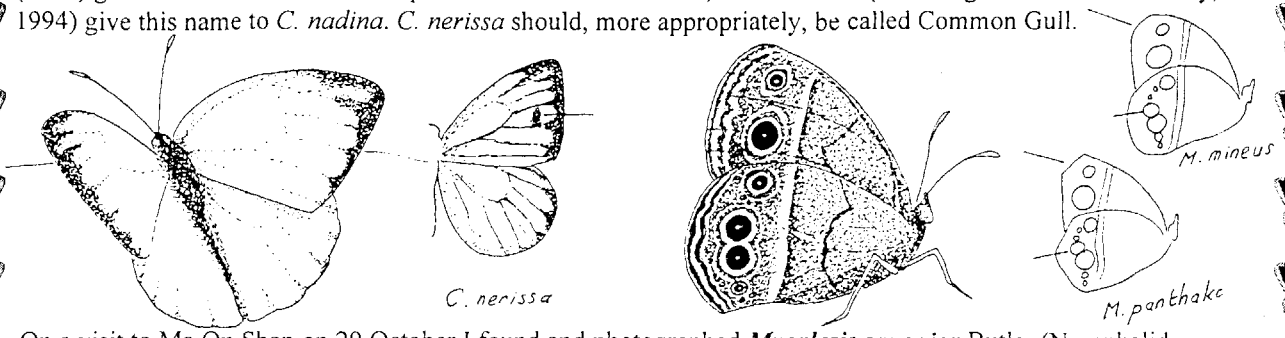
See also *Porcupine!* No. 12 for notes on *Kalima inachus* (Doyere, 1840), Orange Oakleaf, and *Celaenorrhinus leucocera* Kollar, 1848, Common Spotted Flat.

GEORGE WALTHEW

References
Hill, D.S., Johnston, G. & Bascombe, M.J. (1978). *Annotated Checklist of Hong Kong Butterflies*. Memoirs of the Hong Kong Natural History Society No. 11.
Young, J.J. (1992). *New records of butterflies in Hong Kong*. Memoirs of the Hong Kong Natural History Society, 19: 127.

Some Butterfly Species New to Hong Kong

I recently found the time to look through some photographs taken on Ma On Shan last autumn and discovered some photographs of a male ***Cepora nadina*** (Lucas, 1852), Lesser Gull (Pieridae: Pierinae). It was taken on 6 November 1994 and I had obviously assumed, at the time, that this was nothing more than a lightly-marked dry season form of a male Common Gull (*C. nerissa*). Although very similar in appearance to the Common Gull, the species is readily distinguished by the lack of a dark spot in space 3 on the upperside forewing of both male and female, and also lacks any trace of dark dusting along the veins. *C. nadina* is widespread from Sri Lanka to Taiwan and has been recorded in Guangdong. Although both the 1978 checklist (Hill *et al.*, 1978) and Johnston & Johnston (1980) give the common name of *Cepora nerissa* as Lesser Gull, other authors (including Corbet & Pendlebury, 1994) give this name to *C. nadina*. *C. nerissa* should, more appropriately, be called Common Gull.



On a visit to Ma On Shan on 29 October I found and photographed ***Mycalesis sangaica*** Butler (Nymphalidae: Satyrinae). At a casual glance, it could easily be mistaken for the very common Darkbrand Bush Brown (*Mycalesis mineus*). However the forewings are pointed rather than strongly rounded, the colour is "cleaner", and the large eyering in space 3 on the underside of the hindwing is equal in size to that in space 2.. On this particular specimen, the small eyering in space 5 was obsolete, but on another individual I saw on 12 November this ring was present and there was a double ring on the forewing apex as well. This species appears to be confined to China and Mongolia.

It has been reported to me that two specimens of ***Sumalia daraxa*** (Double-day, 1848), Green Commodore (Nymphalidae: Nymphalinae), were caught by Luis Chow near Sai Kung this summer. The species appears similar to *Parasarpa dudu* but the discal band is pale green rather than white and, on the forewing, it breaks into a series of spots towards the tip rather than dividing into a "Y". It is supposed to resemble the Common Bluebottle (*Graphium sarpedon*) in flight. It occurs from Sikkim to Guangdong.

GEORGE WALTHEW

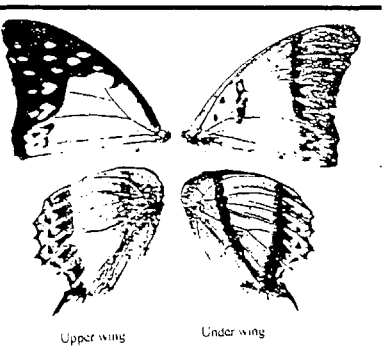
References

Corbet, A.S. & Pendlebury, H.M. (1992). *The Butterflies of the Malay Peninsula*. Malayan Nature Society, Kuala Lumpur.

Hill, D.S., Johnston, G. & Bascombe, M.J. (1978). *Annotated Checklist of Hong Kong Butterflies*. Memoirs of the Hong Kong Natural History Society No. 11.

Johnston, G. & Johnston, B. (1980). *This is Hong Kong: Butterflies*. Hong Kong Government Information Services.

On 6 August 1995 on the ridge road between the top of Tai Po Kau and Lead Mine Pass we found a butterfly with upperparts similar to those of a pierid; however, the underwing of the specimen had rusty brown marks with dark edgings, unlike any other pierid we have ever seen. Reference to X.S. Tong's *Butterfly Fauna of Zhejiang* showed that it was a species of Nawab, ***Polyura nepenthes***. We sent the specimen to Mike Bascombe, who confirmed that it was a new species for Hong Kong. Specimens were subsequently seen at Shing Mun Reservoir and Lead Mine Pass (19 August) and Ho Chung (16 September).The *Monographia Rhopalocerorum Sinensis* gives the distribution for the nominate race to which this specimen seems to belong as Fujian, Hainan and Guangdong. The species has a wide range in southern China and is also known from Burma, India, Thailand and Laos. - *PAUL ASTON & ELME BALASAN*



Hong Kong's Thelyphonid: what is it?

It is not in any of the books or other publications about animal life in Hong Kong or South China known to me, but it is quite common if you know just where to look. The first specimen I ever saw was at Dingushan Man and Biosphere Reserve in Guangdong on 31 May 1984. It bears my field tag number Z-19754. My colleagues at the Guangdong Institute of Entomology were amazed and astounded by it, and liberated it (and a number of reptiles and amphibians) to their own collection. That specimen (and the reptiles and amphibians) cannot now be found. One hopes it may yet turn up, but in any case it could not be identified or named there.

Subsequently I deposited Hong Kong specimens in the Museum of Comparative Zoology, Harvard, curated by Dr. Herbert Levi; the U.S. National Museum of Natural History, Smithsonian, curated by Dr. Jonathan Coddington; and the Bishop Museum, Honolulu, curated by Dr. Scott Miller. My requests for identification have gone unanswered.

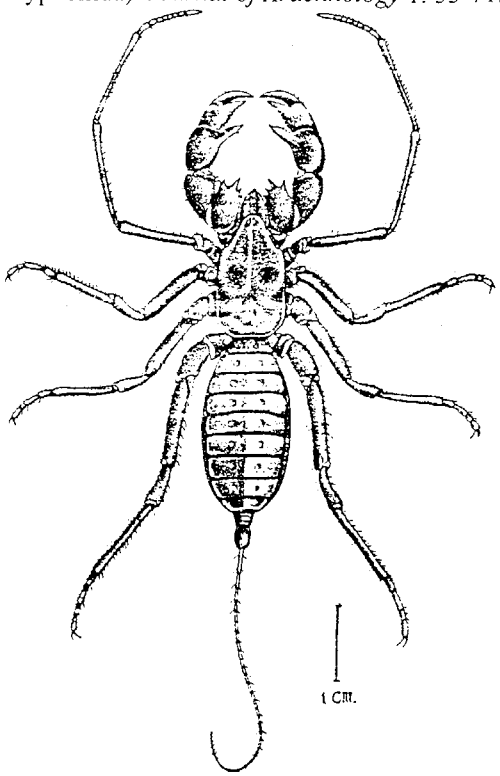
Next, Dr. Wenhua Lu delivered a Hong Kong specimen to South China Agricultural University and Prof. Zenchang Li took one to South China Normal University, both in Guangzhou. Still no clue to a name. Michael Lau has a specimen at HKU, and Steve Karsen once found one in the New Territories mainland. Neither knows what either is.

Thelyphonids are arachnoids with the standard four pairs of legs; the first pair are attenuated and whip-like. Their pedipalps are greatly enlarged and may or may not have movable digits (the Hong Kong form has two which can oppose each other and a third fixed on the third distal segment). They have a caudal peduncle from which extends a whip-like tail. Thelyphonids are often called whip scorpions or vinegaroons - the latter name because of the rich vinegar aroma (acetic acid) they secrete when disturbed. The distantly related amblypygids (with no known Hong Kong representative) also go by both common names because they have whip-like second legs and also secrete acetic acid. However, amblypygids are crab-shaped, broader than long, and have no tail.

Dr. Scott Miller, Bishop Museum, provided two references:

Wu, Hsien Wen (1936). A review of the scorpions and whip-scorpions of China. *Sinensia*, Nanking, 7(3): 113-127.

Rowland, J. Mark, and John A. L. Cooke (1973). Synopsis of the arachnid order Uropygida (= Thelyphonida). *Journal of Arachnology* 1: 55-71.



The Hong Kong specimens do not fit the genus *Typopeltis*, subfamily Typopeltinae (*T. stimpsoni* pictured above) - the only genus recorded in China by Wu. Using both keys and diagnoses provided by Rowland and Cooke, our animals seem to belong to *Mastigoproctus* of the Uropoctinae, a genus previously known only from the Americas.

Unless someone somewhere can pretty soon put a name to this wonderful animal, I will proceed to describe it and name it myself.

JAMES (SKIP) LAZELL
THE CONSERVATION AGENCY
6 SWINBURNE STREET
JAMESTOWN, RI 02835, U.S.A.

The Dangers of Stepwise Multiple Regression

It appears to be a common belief among postgraduate students - indeed, among ecologists in general - that "scientific objectivity" requires you to switch off your brain as soon as you switch on the computer. The combination of a powerful statistical package and a passive human brain then results in a sort of computer-enhanced stupidity which neither could achieve by itself. It cannot be said too often or too strongly that there is nothing in statistics which requires the abandonment of prior knowledge and common sense! I will illustrate this problem with one of the most widely-abused programs in recent PhD theses.

Stepwise multiple regression seems to be a favourite among ecology postgrads. You take a dependent variable (number of birds seen, rats trapped, species counted, activity of limpets or whatever) and a long list of independent variables (often habitat or weather variables) which may or may not have some relationship with it. You throw the whole lot into the computer, press "enter" and the program tells you which of the independent variables are most important, giving precise significance levels for each one.

Statisticians, however, tell a different story. Every recent statistics book aimed at the non-specialist market has a warning about the dangers of using stepwise multiple regression and similar "computer-assisted" techniques for building regression models. Jennrich (1995), for instance, describes the blind use of these programs as "probably the most common source of serious errors in the use of statistical programs". What is the problem?

Firstly, it is important to realize that the simpler techniques offered in most statistical packages (under names such as "forward selection", "backward elimination" and "stepwise regression") do not try all possible combinations of variables and thus may miss the "best" combination. Indeed, different, commonly-used techniques will often give different results. Secondly, although these techniques are "guided" by a statistical test (the t or F test, which are equivalent) the significance levels given have only a vague relationship with the real risk of error. This is because the program looks at many possible models to find the best candidate and then tests only this, i.e. the data themselves are used to determine which model to test. To put it another way, a large number of F tests are performed during the procedure and there is a high probability that, by chance, some unimportant variables are included or some important ones eliminated. The model selected may fit the data well simply by chance. Some programs allow the user to specify the "significance level" in order to control the number of variables entering the model: do not be misled into thinking that this reflects the true probability of errors arising by chance! Other programs fix the F value for adding or eliminating a variable from the model but the consequences are the same.

What can the poor postgrad do? If at all possible, one should try to avoid the use of these techniques altogether. If regression is used to test a limited number of *a priori* hypotheses concerning the relationship between the dependent and independent variables, most of these problems are avoided. Where you really do need to sort through a "haystack" of possible independent variables, computer-assisted techniques for building regression models can help eliminate the least interesting variables very quickly, leaving you with a small number for further investigation. The most sensible approach is to use an "all-subsets" regression program, which tries out all possible combinations of the independent variables. Such programs are available on most new statistical packages (e.g. as Best Subsets Regression [BREG] on MINITAB). There are several possible criteria which can be used to pick the "best" regression model from those tried, of which Mallows C_p seems to be the most useful. Don't use these criteria passively but examine a short-list of "good" models (MINITAB will print up to five of each size) using both the selection criteria the program provides and your knowledge of the biology of the system under study. If the model looks like nonsense it probably is. You can then investigate the chosen models further by running them through a standard regression program which provides opportunities for analysis of residuals - an essential step in any regression. It is particularly important to check that the influence of a small number of outliers is not responsible for the inclusion of an independent variable in the model. You should also check for evidence of non-linearity in the relationships.

Computer-assisted model building techniques, such as those discussed above, are best seen as a form of empirical or descriptive analysis (like, for instance, PCA), rather than rigorous statistical tests. They can be very useful in generating hypotheses but further studies and new data are needed to test these. Where, as is usually the case in a PhD project, collecting new data is out of the question, it is a good idea to divide your original data set randomly into two halves and to use one half to generate the models and the other to test them. This procedure greatly reduces the risk of a good fit arising by chance alone. Alternatively, if you have two years of data, you could check a model based on the first year against the data from the second year. Remember, however, that regression analysis of observational data provides no direct evidence concerning cause and effect. Indeed, a "good" regression model may have no biological meaning whatsoever!

Suggested reading:

Graybill, F.A. and Iyer, H.K. (1994). *Regression Analysis: Concepts and Applications*. Duxbury Press. (Gives MINITAB and SAS examples).

Jennrich, R.I. (1995). *An Introduction to Computational Statistics: Regression Analysis*. Prentice-Hall.

RICHARD CORLETT

In The News

GLOBAL

❖ A bill in the U.S. Congress would curtail the Environmental Protection Agency's budget by almost one third and cut its enforcement program by US$130m **(International Herald Tribune, 17 Jul)**. Most of the environmental protections established over the past 30 yrs could be annulled by amendments proposed by Republican congressmen. The legislation aims to prevent: the setting of water quality guidelines in the Great Lakes; the limiting of sewage dumped into rivers; the protection of wetlands; the obligation of chemical plants to have accident contingency plans; the curbing of pollution from cement kilns; and the regulation of pesticides in foodstuffs **(E.Ex., 9 Sep)**.

❖ France announced a final round of nuclear tests, in Mururoa, Polynesia, in September. President Chirac said the tests would have "absolutely no ecological impact." **(SCMP, 16 Jun)**. France banned Greenpeace from the test zone **(SCMP, 3 Jul)**. French forces stormed the Greenpeace ship when it entered the exclusion zone **(SCMP, 11 Jul)**.

CHINA

❖ A US$23.6m nature-reserve management project, including $17.9m from the Global Environment Fund, will be launched, and will probably include: Foping N.R., Shaanxi; Shennongjia N.R., Hubei; Xishuangbanna, Yunnan; Poyang Lake, Jiangxi; Wuyishan Mtn., Fujian; Zhouzhi, Niubeiliang; & Taibaishan, Shaanxi **(China Daily, 16 Aug)**.

❖ Przewalski's Gazelle, which numbered only 350 in 1986, is thought to be down to less than 200 in three populations around Qinghai Lake, Qinghai. Poaching continues, there is no reserve and no captive population **(Oryx 29(4))**.

❖ Of 30,000 higher plant spp. in China, 10-15% are endangered, according to Ma Keping of the Research Inst. of Botany, Chinese Academy of Sciences **(C.D., 22 Aug)**.

❖ The Black-necked Crane population in Xundian County, Yunnan, has dropped from 1,000 to 66 in ten years due to hunting. Only 5,000 are thought to survive in China. H.K.'s China Exploration and Research Society, backed by Coca Cola, has launched a conservation campaign, led by explorer Wong How-man **(E.Ex., 19 Jun)**.

❖ Since establishment of a reserve 10 years ago, the number of birds at Dongting Lake in central China has increased from 2m to 12m, including more rare birds, say reserve officials **(C.D., 22 Aug)**.

❖ Gansu Prov. has recorded increases of Musk Deer (now >5,000 in the Xinglongshan Nature Reserve), wild Camel (from 70 in 1982 to >400 now at the Annanba N.R.), White-lipped Deer (from 300 in 1976 to 2,500 now in Subei County), Argali Sheep, Guizhou Golden Monkeys and Addax **(C.D., 24 Jul)**.

❖ China has launched a cleanup of the heavily-polluted Huaihe River. So far 60 firms, mostly paper factories, in Henan & Shandong have been closed **(Window, 23 Jun)**. An executive order said most parts of the river valley should be clean by 2000 **(E.Ex., 3 Oct)**.

❖ Forest cover in the Qilian Mountains, Gansu, has receded from 22.4% in the 1950s to 14.4% today. Water flow in the rivers has declined by 16%, with northern desert encroachment of 2-5 metres per year **(C.D., 22 Jul)**.

❖ The "Green Wall" Shelter Belt project across North China has created >15m ha of forests over 17 years, with an 85% survival rate **(C.D., 29 Aug)**.

❖ 365 species of rare plants from the middle & lower Yangtze region are being cultivated at the Reservation for Rare Plants Threatened with Extinction of Jiujiang, Jiangxi, between Poyang Lake and Lu Shan Mountain **(Sh. Star, 3 Oct)**.

❖ Efforts to breed the Yangtze River Dolphin are failing, due to difficulties in trapping animals and deaths within months of capture. Local people have seen dolphins only twice this year **(E.Ex., 17 Jun)**.

❖ The Golden (or snub-nosed) Monkey, which numbers 750 in its Fanjinshan Mountains range in Guizhou, has bred in captivity on the reserve **(C.D., 30 May)**. Beijing Centre for Breeding Endangered Animals (BCBEA) has bred 13 Sichuan snub-nosed monkeys, and 15 Guizhou & Yunnan snub-nosed monkeys, since 1987 **(C.D., 3 Jun)**. BCBEA opened an Education Base **(C.D., 30 Jun)**. BCBEA breeds >100 pheasants each year, and now has >1600 pheasants of 16 spp. **(C.D., 6 Sep)**.

❖ Since 1987, over 100 Chinese scientists have been to Germany to receive advanced training in ecology **(China Daily, 30 Sep)**.

❖ 51 people were arrested in Dec. 1994 for poaching elephants in Yunnan **(Oryx, 29(4))**.

compiled by John Fellowes

GLOBAL

❖ Pieter Tans, of the U.S. National Oceanic & Atmospheric Admin., said carbon isotope analysis showed terrestrial plants absorb as much atmospheric carbon dioxide as the oceans **(C.D., 28 Aug)**.

❖ Yale University's Robert Mendelsohn & New York Botanical Garden's Michael Balick calculated that tropical forests contain undiscovered drugs worth US$147b **(E.Ex., 1 Aug)**.

❖ The Chinese Academy of Meteorological Sciences has found a new summertime 1,000km-wide area of depleted ozone, over the Tibet-Qinghai plateau **(E.Ex., 15 Jun)**.

❖ ~20% of 73 Beluga Whale carcases examined from the St. Lawrence River showed death due to cancer. Montreal researchers said it could be linked to toxic by-products from nearby aluminium smelters **(E.Ex., 12 Jun)**.

❖ In 1996 South Africa's annual White Rhinoceros auction is expected to attract Chinese buyers, who reportedly plan to breed them in Guangdong for their horns **(E.Ex., 4 Jul)**.

❖ The introduced New Zealand population of Australian bush-tail possum, estimated at 70m spread through 90% of the country, appears to have developed a virus **(E.Ex., 5 Jul)**.

❖ The record age for a captive Hippopotamus was set by a 61 year-old female which has died at Hellabrun Zoo, Munich, Germany **(C.D., 13 Jul)**.

LOCAL

❖ FoE's Lisa Hopkinson complained ACE members were sometimes shown EIAs just weeks before construction started, making it hard to impose conditions or changes **(H.K.Std., 4 Jul)**.

❖ Town Planning Board's Winston Chu Ka-sun is proposing a bill to prevent further harbour reclamation **(H.K.Std., 29 Jul)**. The Democratic Party has backed the bill **(H.K.Std., 3 Aug)**.

❖ The Green Island reclamation project was gazetted on 13 Oct., despite opposition from China, PWC and other sources. Secretary for Planning, Environment & Lands, Bowen Leung, said the proposed dumping site "did not relate to reclamation". Mr Leung said the gazettal was aimed at seeking public views **(SMP, 15 Oct)**.

❖ ACE endorsed a low-level radioactive waste facility on Siu A Chau in the Soko Islands. FoE's Lisa Hopkinson said the Government had contravened its own planning intention at Siu A Chau, zoned as a conservation, landscape and coastal protection area with tourist development potential. WWF's David Melville called for protection of Sunshine Island as off-site mitigation **(E.Ex., 17 Jul)**.

❖ Sha Lo Tung village representative Roger Li threatened villagers would vandalise the whole valley if development plans were further delayed **(E.Ex., 1 Jun)**. Legislator C.Y.Lee called on Govt. to preserve the valley, resettle villagers and compensate developers **(SCMP, 2 Jun)**. Li threatened to sue the SLT Development Company if new houses were not built; Li said environmentalists had exaggerated the number of rare species **(E.Ex., 20 Jun)**. Villagers stopped bulldozing vegetation in the valley following requests from Govt. and the SLTDC **(SCMP, 29 Jun)**.

❖ A dead male dolphin was found near Shui Hau, South Lantau **(SMP, 4 Jun)**.

❖ Legco approved funds for the proposed Sha Chau dolphin sanctuary on 9 Jun **(SCMP, 19 Jun)**. British & Chinese negotiators on the Infrastructure Coordinating Committee agreed on a new shipping channel avoiding the proposed sanctuary, but passing nearby **(H.K.Std., 18 Jul; E.Ex., 19 Jul)**. A feasibility study by Carolina Hoffmann of Heriot-Watt University concluded the sanctuary will not protect the dolphins **(SCMP, 2 Sep)**. AFD have requested changes to UNEP's report, which concluded the proposed sanctuary is inadequate to assure the dolphins' survival **(E.Ex., 13 Sep)**.

S.E.ASIA

❖ Indonesia earned US$4.5B from forest-based exports in 1993, of which 75% was from plywood. The World Bank says its felling rate is unsustainable **(H.K. Std., 12 Jun)**.

❖ Indonesia says timber companies which clear land through burning will have their forest concessions revoked. Fires in Aug. & Sep. 1994 razed >5m ha of bush, plantations & forest in Sumatra & Kalimantan **(H.K.Std., 7 Jun)**.

❖ WWF Malaysia said the EIA process for the Bakun hydro-electric dam, which will flood an area of forest in Sarawak the size of Singapore, was a "complete farce" **(SCMP, 16 Jun)**.

❖ Kota Kinabalu Park, Sabah, has recruited 15 villages to guide tourists to see giant Rafflesia flowers, as a profitable alternative to clearcutting the forest for paddy **(CD, 3 Oct)**.

❖ Five wetlands along Taiwan's west coast are threatened by pollution and industrial encroachment **(E.Ex., 28 Aug)**.

❖ Singapore will spend over US$1.43b over 5 years on a new offshore landfill site & expanded sewage treatment facilities **(C.D., 6 Jun)**.

more in The News...

MARINE RESOURCES

❖ Canada says its seal population has doubled since the 1970s, and Harp & Grey Seals are impeding fish stock recovery **(E.Ex., 1 Jul)**.

❖ Japan sought IWC approval to continue killing 300 minke whales per year for the next 16 years, for "population studies" **(H.K.Std., 8 Jun)**. In H.K., IFAW & Body Shop, backed by the Governor's wife, called on Japan & Norway to stop whaling **(H.K. Std., 1 Jul)**.

❖ 83,000 tonnes of oil from Hoyu Shipping's oil tanker Sea Prince, hit by Typhoon Faye, threatened heavily-fished waters and shellfish farms near Yosu, South Korea **(SCMP, 26 Jul; Time, 7 Aug)**.

LOCAL

❖ The Marine Mammal Conservation working group set up by Govt. does not include cetacean specialists Lindsay Porter & Chris Parsons **(E.Ex., 10 Jul)**.

❖ Lamma residents, proposing a sustainable development plan to replace Govt.'s plans for reclamation, a sewage treatment plan, a refuse station & a new road there, will appeal to ExCo following ACE's endorsement of the Govt. plan **(E.Ex., 14 Jul)**.

❖ Tai O residents may oppose creation of mangrove, as mitigation for those lost at Chek Lap Kok, fearing it will displace a promised typhoon shelter **(SCMP, 3 Jul)**.

❖ Farmers in Shek Kong & Pat Heung are to be given 3 months to remove illegal car dumps & containers from their land or face land confiscation. Heung Yee Kuk blamed Govt. developments, blocking rivers and filling ponds, for residents' abandonment of farming **(SCMP, 29 Jun)**.

❖ The High Court upheld a TPB decision to extend mines & quarries into woodland at Sau Mau Ping **(SCMP, 1 Aug)**.

❖ A damaged tanker, the Tanja Jacob, spilled several hundred tonnes of crude oil into the Pearl River at Guangzhou **(E.Ex., 22 Aug)**. Guangzhou Port Authority declined to give information on the control of the spill **(SCMP, 25 Aug)**.

❖ Airport contractors have built an illegal road at Tai Che Tung, despite Architectural Services Dept.'s pledge to protect the hillside **(E.Ex., 26 Jun)**.

❖ Greenpeace is considering Hong Kong as a base for its East Asian activities **(SCMP, 14 Aug)**.

❖ Urban Services Dept. has urged laws protecting 356 old, strong & rare trees, identified by HKU's C.Y.Jim, as it launched a $25m 5-year plan to plant up to 12,000 roadside trees **(E.Ex., 23 Jun)**.

❖ H.K.'s Environmental Law Association organized a pollution forum, after the decision of Japan's Supreme Court to order HK$20m compensation to people whose health was damaged by air pollution beside the Osaka to Kobe motorway **(SCMP, 17 Jul)**.

❖ WWF's Dan Viederman said WWF is opposed to China's plan to loan two Giant Pandas to Hong Kong in 1997, since H.K. lacks trained staff or facilities **(SCMP, 4 Sep)**.

❖ Maxim's Caterers were fined $50,000 for polluting Tolo Harbour for the fifth time **(E.Ex., 16 Aug)**.

❖ Cathay Pacific has established an organic Green Farm in Yuen Long **(SCMP, 26 Jun)**.

❖ Macau's population is estimated to reach 540,000 by 2000; this is 100,000 more than forecast in 1991 **(H.K.Std., 12 Jul)**.

MAI PO & DEEP BAY

❖ On 4th Sep. the British Govt. announced the official notification to the Ramsar Bureau of Mai Po as a Ramsar site **(H.K.Std., SCMP, 5 Sep)**.

❖ The Town Planning Board resolved to face Henderson Land in the Court of Appeal, to stop the proposed $2b golf course & housing complex at Nam Sang Wai. The Town Planning Appeal Board approved the development, Justice Yam rejecting the "intrinsic importance" of the fishponds surrounding Mai Po **(SMP, 4 Jun)**.

❖ WWF HK & DEB's John Hodgkiss said the joint liaison group failed to consider the impact of constructing a causeway expected to take up to 6.5 sq km of Deep Bay. MCS & WWF said it may invalidate the EIA for the Shenzhen River Regulation Project **(E.Ex., SCMP, 31 Aug)**.

❖ E.P.D., Axis Environmental Consultants & C.E.S. (Asia) have begun a two-year, $12m study of water movements, water quality and pollution loadings in Deep Bay **(H.K.Std., 22 Jul)**.

❖ The Highways Dept. adjusted Route 3 plans to avoid damage to wetlands near Au Tau, following FoE & WWF protests **(SCMP, 4 Aug)**.

❖ WWF's Lew Young urged developers to coordinate their proposals for nature reserves near Mai Po, to increase their effectiveness and avoid resource wastage **(E.Ex., 2 Sep)**.

Cuttings courtesy of WWF-HK. Taken from newspapers in the period June to October 1995. Readers are invited to comment or elaborate on any of the above items.

TRADE

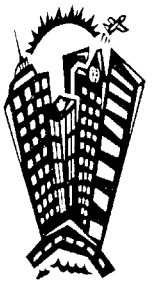
❖ The Hippopotamus, Saiga Antelope, box turtles, all pangolin species, Indian Flap-shell Turtle, tarantulas, emperor scorpions, agar wood & Himalayan Yew were added to the Animals and Plants (Protection of Endangered Species) Ordinance **(SCMP, 1 Aug)**.

❖ AFD lack the power of arrest under the AP(PES) Ordinance, and can only serve a summons to smugglers with a Hong Kong address. Fifty of 600 people caught smuggling endangered animals or parts into H.K. escaped through this loophole. Traffic's Rob Parry-Jones said Customs & Excise Dept. should use their powers of arrest **(E.Ex., 25 Aug)**.

❖ DEB's Michael Lau expressed alarm over the increased volume of wildlife trade: freshwater turtles are now imported from Indonesia, Thailand & Vietnam. Several thousand tonnes of three Indonesian species are imported each year **(E.Ex., 6 Jun)**.

❖ AFD seized 29 CITES-listed reptiles from a Tuen Mun shop, including a Black Pond Turtle **(E.Ex., 17 Jun)**.

Developments



Environmental Impact Assessments currently in the pipeline:

Proposed Residential/ Commercial Development at Tseung Kwan O - Area 37C

Rural Drainage Rehabilitation Scheme

Proposed Housing Developments at Tin Shui Wai - Areas 3, 30 & 31

Proposed Housing Development at Ma On Shan - Area 77 Site 19

TIGERS

❖ Eight to 12 South China Tigers are believed to survive in Jiangxi, according to a WWF & Chinese Ministry of Forestry survey begun in 1990 **(Shanghai Star, 25 Aug)**. A Forestry Ministry protection program for the subspecies, creating corridors between inhabited areas and setting up a captive breeding centre, claims to have raised the population from 20 in 1991 to 30-40 **(Sh. Star, 1 Sep)**.

❖ A three-year US$650,000 WWF-Germany project has reduced poaching of Siberian Tigers by up to 70% in Siberian forests **(E.Ex., 5 Aug)**.

❖ Heilongjiang's Hengdaohezi Breeding Centre for Siberian Tigers needs US$1,200 per day to feed its 72 tigers. The Centre is US$1.2m in debt **(C.D., 22 Aug)**.

❖ A Tsuen Wan shop was fined HK$40,000 for selling tiger- and rhino-horn-medicine **(E.Ex., 5 Aug)**.

CHINA

❖ China's per capita farmland area is 0.18ha, only 25% of the world's average. Designation of farmland protection zones, where capital construction projects are forbidden, will be accelerated **(C.D., 21 Jun)**. Arable land in China decreased by 715,000 ha last year to 109m ha, mainly due to losses in Guangdong & coastal regions **(SCMP, 12 Jul)**.

❖ Guangdong has cancelled 7 golf course projects, returning 123ha of land to farmers. The province has 51 such projects, covering 7250ha, of which 720ha is arable. Only 24 have been approved. No new projects will be approved this year **(C.D., 20 Jul)**.

❖ Guangzhou has launched a HK$7m project with H.K. Green Power to promote environmental protection. An Environmental Education Centre will be set up in the 200ha Longgui ecological village, containing fish ponds, orchards and farms **(H.K.Std., 29 Aug)**.

❖ Zhejiang Province has built 12 sustainable "ecological villages", of which 3 have received UNEP recognition **(C.D., 1 Jul)**.

❖ China, Japan, Rep. of Korea & Russia will open a centre in Dalian, Liaoning Prov., to improve cooperation on environmental problems **(C.D., 11 Aug)**.

❖ Annual industrial & domestic waste discharge into the sea increased from 6.5b tons in the 1980s to 8b in the 1990s. Since 1972 many monitoring stations, 232 offshore and 242 near ports and river mouths, have been set up **(C.D., 12 Sep)**.

❖ China has not requested World Bank loans for the Three Gorges Dam, fearing international scrutiny and environmental restrictions **(SCMP, 18 Jul)**.

❖ The Chinese Academy of Social Sciences has set up an ecological & environmental economics research centre **(C.D., 27 Jun)**.

❖ Hangzhou, Beijing & Harbin cities will ban plastic fast-food boxes, and replace them with paper ones **(C.D., 24 Aug, Sh. Star, 25 Aug)**.

Recent publications

VOLUMES

Morton, B.S., G.Xu, R.Zou, J.Pan & G.Cai (eds.) 1995. **The Marine Biology of the South China Sea II. Proceedings of the 2nd International Conference on the Marine Biology of the South China Sea, Guangzhou, China.** World Publishing Corporation, Beijing, i-vii + 263pp.

Wong, C.K., K.H.Chu, Q.C.Chen & X.L.Ma (eds.) 1995. **Environmental Research in the Pearl River and Coastal Waters.** Guangdong Higher Education Press, Guangzhou.

Wong, Y.S. & N.F.Y.Tam (eds.) 1995. **Asia-Pacific Symposium on Mangrove Ecosystems.** Kluwer Academic Publishers.

PAPERS

Davies, M.S. & G.A. Williams 1995. **Pedal mucus of a tropical limpet, *Cellana grata* (Gould): energetics, production and fate.** Journal of Experimental Marine Biology and Ecology 186, 77-87.

Hau, B. & G.A. Williams 1995. **A review of the environmental impact assessments for marine borrow areas in Hong Kong - a document for discussion.** Hong Kong Marine Conservation Society, 17pp.

Ho, Y.B. 1995. **Seaweeds for monitoring eutrophication and heavy metal pollution.** In B.C.Rana (ed.), Pollution and Biomonitoring. Tata-McGraw Hill Publishing Company Ltd., New Delhi, pp. 183-210.

Hodgkiss, I.J. 1995. **Journals in marine science and related fields held in Hong Kong libraries.** The Marine Biological Association of Hong Kong, p.14.

Hodgkiss, I.J. & W.W.S. Yim 1995. **A case study of Tolo Harbour, Hong Kong.** In: A.J.McComb (ed.), Shallow Estuaries and Lagoons. CRC Press, Boca Raton, pp. 41-58.

Hoffmann, C.C. 1995. **The feasibility of the proposed sanctuary for the Chinese White Dolphin, *Sousa chinensis*, at Lung Kwu Chau and Sha Chau, Hong Kong. A report for the World Wide Fund for Nature Hong Kong.** Swire Institute of Marine Science, University of Hong Kong.

Hyde, K.D., L.L.P. Vrijmoed & I.J. Hodgkiss 1995. **Tropical mycological research in Hong Kong.** The Mycologist 9, 35.

Kennish, R. 1996. **Diet composition influences the fitness of the herbivorous crab *Grapsus albolineatus*.** Oecologia 105, 22-29.

Mak, Y.M. 1995. **Egg capsule morphology of five Hong Kong rocky shore littorinids.** Hydrobiologia 309, 53-59.

Morton, B.S. 1994. **Spotlight: The Swire Institute of Marine Science.** Pacific Science Association Information Bulletin 46(3/4), 19-22.

Morton, B.S. 1995. **Institutional profile: The Swire Institute of Marine Science.** Asian Journal of Environmental Management 3, 85-86.

Morton, B.S. 1995. **The population dynamics and reproductive cycle of *Septifer virgatus* (Bivalvia: Mytilidae) on an exposed rocky shore in Hong Kong.** Journal of Zoology 235, 485-500.

Morton, B.S. 1995. **The biology and functional morphology of *Pteria brevialata* (Bivalvia: Pterioidea) associated with gorgonians in Hong Kong.** Journal of Zoology 236, 223-241.

Morton, B.S. 1995. **Editorial. Hong Kong's corals.** Marine Pollution Bulletin 30, 230-231.

Morton, B.S., K.Chan & J.C. Britton 1995. **Hunger overcomes fear in *Nassarius festivus*, a scavenging gastropod on Hong Kong shores.** Journal of Molluscan Studies 61, 55-63.

Parsons, E.C.M. 1994. **Hong Kong's white dolphins.** Soundings 1(9), 2-3.

Parsons, E.C.M. & L.J.Porter 1995. **The threats to Hong Kong's Indo-Pacific humpbacked dolphin population.** Proceedings of the 3rd Annual Symposium on Cetacean Ecology and Conservation, National Taiwan University, Taipei, Taiwan, pp. 101-117.

Tang, W.S.M. 1995. **GIS in the Asia/Pacific Region - Hong Kong.** GIS Asia/Pacific 1(1), 32-33.

Tang, W.S.M. 1995. **Integration of geographic information system, global positioning system, and remote sensing techniques for coastal resource management: a case study of Hong Kong.** (C.D.Rom.) Proceedings of Coast GIS '95 Ireland.

Vrijmoed, L.L.P., E.B.G. Jones & K.D. Hyde 1994. **Observations on subtropical mangrove fungi in the Pearl River estuary.** Acta Scientiarum Naturalium Universitatis Sunyatseni 33, 78-85.

Williams, G.A. & D. Morritt 1995. **Habitat partitioning and thermal tolerance in a tropical limpet, *Cellana grata*.** Marine Ecology Progress Series 124, 89-103.

Wilson, K.D.P. 1995. **The Gomphid dragonflies of Hong Kong, with descriptions of two new species (Anisoptera: Gomphidae).** Odonatologica 24(3), 319-340, 58 figs.

Yim, W.W.S. 1995. **Implications of sea-level rise for Victoria Harbour, Hong Kong.** Journal of Coastal Research (Special Issue) 14, 167-189.

BOOKS

Friends of the Earth 1995. **Coastal Guide Series: Lamma Island.** FoE Hong Kong.

Stokes, E. 1995. **Hong Kong's Wild Places: an Environmental Exploration.** Oxford University Press, Hong Kong, 198pp.

THESES

Chan Hing 1995. **The Use of Trash Fish Wastewater and Inorganic Fertilizers in Larval Fish Food Chains: the Ecological Consequences and the Potential Applications in Aquaculture.** Ph.D. Thesis, University of Hong Kong, Dept. of Ecology & Biodiversity.

Ho Ching-yee 1994. **The Ecology of Exotic Squirrels (Sciuridae) in Hong Kong, with Special Reference to *Callosciurus erythraeus thai* (Kloss).** M.Phil. Thesis, University of Hong Kong, Dept. of Ecology & Biodiversity.

Huang Qin 1995. **Polymorphism in Twelve Species of Neritidae (Mollusca: Gastropoda: Prosobranchia) from Hong Kong.** Ph.D. Thesis, University of Hong Kong, Dept. of Ecology & Biodiversity.

Kwok Pik Wan (Winnie) 1995. **The Ecology of Two Sesarmine Crabs, *Perisesarma bidens* (De Haan) and *Parasesarma plicata* (La Treille), in the Mai Po Marshes Nature Reserve, Hong Kong.** Ph.D. Thesis, University of Hong Kong, Dept. of Ecology & Biodiversity.

Nam Kam Shing 1995. **Conservation of Hong Kong Wild Orchids by Leaf Tip Culture.** M.Phil. Thesis, University of Hong Kong, Dept. of Ecology & Biodiversity.

ENVIRONMENTAL IMPACT ASSESSMENTS

Civil Engineering Dept. 1995. **Green Island Reclamation (Part) Public Dump.** EIA.

Civil Engineering Dept. 1995. **Reclamation for shipyard at To Kau Wan, North Lantau.** EIA for operation phase.

Civil Engineering Dept. 1996. **Backfilling of marine borrow areas north of Lantau and south of Tsing Yi.** EIA.

Drainage Services Dept. 1995. **Shenzhen River Regulation Project Stage 2 Works.** EIA.

Drainage Services Dept. 1995. **Strategic Sewage Disposal Scheme Stage 1.** EIA.

Drainage Services Dept. 1995. **Ting Kau and Sham Tseng Sewerage Scheme.** EIA.

Highways Dept./ Route 3 Contractors' Consortium 1995. **Route 3 Tai Lam Tunnel and Yuen Long Approach Northern Section.** Detailed EIA.

Highways Dept. 1995. **Sham Tseng Link Feasibility Study.** EIA.

Hong Kong Electric Company 1995. **Lamma Power Station - Navigation Channel.** EIA.

Territory Development Dept. 1995. **Design of Reclamation and Edge Structures for Container Terminals 10 and 11 and Back-up areas.** EIA.

Territory Development Dept. 1995. **Permanent site for Mid-Stream Operation at Stonecutters Island.** EIA.

Territory Development Dept. 1995. **Tsung Pak Long Flood Protection Scheme.** EIA.

FREE Column

It was a sleepy group of ecologists which gathered at Kowloon KCR station at 7.30am on Monday morning. The Kadoorie contingent, Gary Ades, GT Reels, John Fellowes and myself, were joined, as we imbibed caffeine, by Billy Hau, and the party was completed when Michael Lau appeared with our train tickets to Shui Hing.

The purpose of the expedition was to visit the Dinghushan Biosphere Reserve in Guangdong Province, to see what we could see. The binoculars were out as soon as the train started moving and it was not long before Michael was claiming a prize for being the first to spot an Egret in China. Closer examination revealed that his Egrets bore an uncanny resemblance to white plastic bags, but we shouldn't be too hard on him, he did miss out on the coffee. Apart from the odd Drongo, birds were conspicuous in their absence from the fields around the railway. This may have been due to poisoning by pesticide residues and not just trapping for consumption.

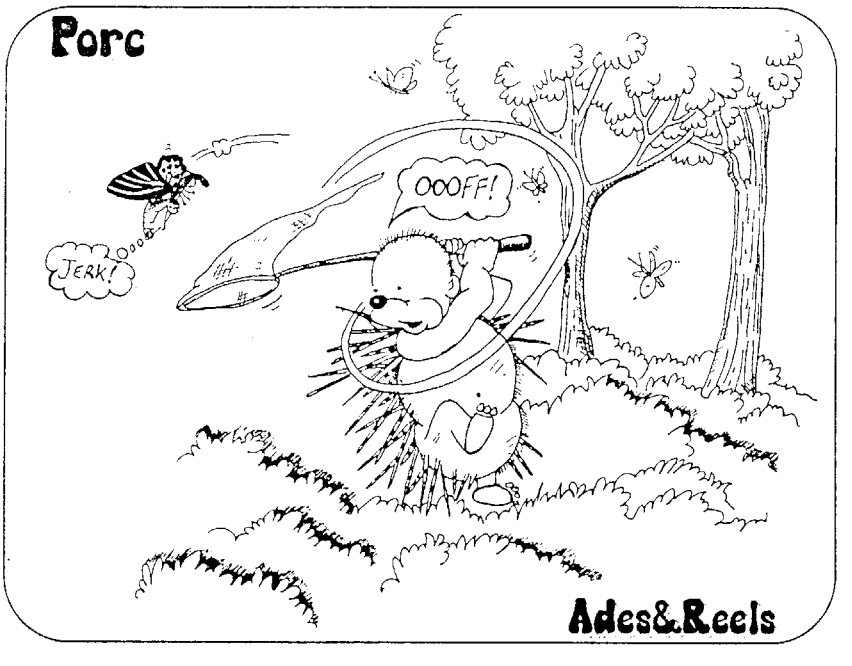
We dined at Shui Hing and the first reptile we encountered was a snake which was being carried towards the restaurant kitchen by an old man who appeared to have caught it nearby. Coincidentally, the first mammal we saw was also in a restaurant, a rat was carried out of the kitchen as we breakfasted. We're not sure why it didn't go the same way as the snake, given that rat was indeed on the menu. Sadly, so were Leopard Cat, Barking Deer, Wild Boar and Civet, and this was within walking distance of the reserve.

The ecological findings of the expedition have been summarised elsewhere, so I will conclude with the more general observations: Bamboo wine is infinitely superior to rice wine, barber shops do not all give haircuts and the girls in Hong Kong are the prettiest in South China (according to the 5/6 of the party with "y" chromosomes) (*more research needed - eds.*). Finally, the Egret spotting prize does **not** go to GT for the stuffed bird in the Reserve Museum but to John, who saw a live specimen from the ferry home. I saw it too, but given that I would be hard pressed to tell an egret from a swan I defer my claim. *Jane Frohlich*

BIODIVERSITY SURVEY - your help wanted

The Biodiversity Survey of Hong Kong is now under way. The Survey aims to map the Territory's wildlife and identify site conservation priorities. Readers of *Porcupine!* can help in this process by sending in their sightings of mammals, reptiles, amphibians, birds or insects (past, recent or new), with a contact telephone number and as much information as possible (e.g. description of animal, its behaviour, the habitat and precise location - giving a map reference if possible - date, time of day and weather conditions). Photographs and specimens (if the animal was dead when sighted) would be gratefully received. Please send your records to the Dept. of Ecol. & Biod. (Biodiversity Survey), HKU, Pokfulam Road, Hong Kong (fax 2517 6082) or telephone Michael Lau on 2859 2814 or Graham Reels on 2488 5000.

Five new records of butterflies have been made at the AFD's Tai Lung Experimental Station since September 1994. Details as follows: ***Arhopala bazala turbata*** (Butler) Lycaenidae: Theclinae. Tai Po Kau, 9.11.94. ***Heliophorus ila chinensis*** (Fruhstorfer) Lycaenidae: Lycaeninae. Sheung Shui, 4.9.94. ***Jamides bochus plato*** (Fabricius) Lycaenidae: Polyo-mmatinae. Sheung Shui, 9.11.94. ***Pantoporia hordonia rihodona*** (Moore) Nymphalidae: Limenitinae. Fung Yuen, Tai Po, 25.5.95. ***Psolos fuligo*** (Mabille) Hesperiidae: Hesperiinae. Sheung Shui (date not given). There is yet another brown skipper (Hesperiidae) pending identification. *CLIVE S.K. LAU*



Postgrads, lecturing staff and natural history enthusiasts: you are cordially invited to submit articles about your work or interests in Hong Kong for inclusion in future issues of **Porcupine!**

Editors: Graham Reels, Gary Ades & John Fellowes
Porcupine!
Kadoorie Agricultural Research Centre, HKU
Lam Kam Road, Yuen Long
New Territories, HK
Fax 24885285 **Tel 24885000 / 24886192 / 24886499**
Printing and mailing costs kindly paid by Dept. Ecol. & Biod,